Welding Engineer

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MID-JUNE, 1955

Fact File Issue

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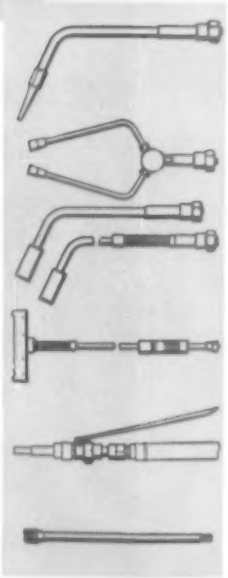

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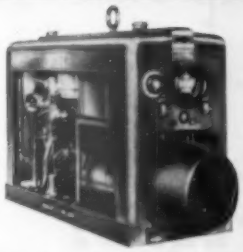

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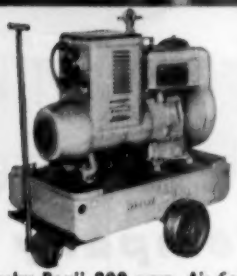

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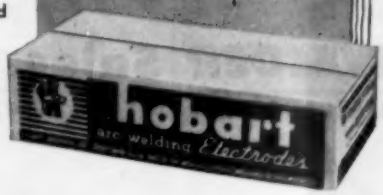

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TED B. JEFFERSON
Editor and Publisher

FELIX T. TANCULA
Executive Editor

JACK FAIRLIE
B. M. BRITE
AUDREY L. MADSEN
Assistant Editors

JOYCE C. NEVIS, *Production*

JIM BREWSTER, *Circulation*

WARREN WARE
Western District Manager
12 E. Grand Ave., Chicago 11, Ill.
Telephone: DElaware 7-0339

HERMAN PHELPS
Eastern District Manager
P. O. Box 128, White Plains, N. Y.
Telephone: WHite Plains 9-3876

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MODERN METHODS
for Joining Metals

SIGMA WELDING—Automatic, fusion welding process. Welds stainless steel (series 300) over ⅛-in. thick. Welds copper and other non-ferrous metals over ⅛-in. thick. Makes excellent welds in killed carbon steel. Argon protects weld zone—consumable electrode.

"UNIONMELT" WELDING—Makes strong, sound welds at high speeds in the production of pipe, pressure vessels, tanks, ships, railroad, automotive and marine equipment. Automatic, fast welding. Semi-automatic welder is economical maintenance tool.

"HELIARC" WELDING—Well suited for work on hard-to-weld metals—Argon protects weld zone—No flux required—Welds wide variety of joints in nearly all commercial metals up to ⅛-in. thick.

OXY-ACETYLENE WELDING, BRAZING AND SOLDERING—Permits fabrication of many structures and parts made of all metals. Ideal repair tool.

Linde
TRADE-MARK

Linde Air Products Company
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.
Offices in Other Principal Cities
In Canada: LINDE AIR PRODUCTS COMPANY
Division of Union Carbide Canada Limited, Toronto
(formerly Dominion Oxygen Company)

The terms "Linde," "Heliarc," and "Unionmelt" are registered trade-marks of Union Carbide and Carbon Corporation.

Useful Conversion Constants

(Logarithms given to facilitate calculations)

Metric to English System

1 meter	39.37 in.	Log 1.5952 or 3.28 ft	Log 0.5160
1 square meter	1,550 sq in.	Log 3.1904 or 10.76 sq ft	Log 1.0320
1 centimeter	0.3937 in.	Log 0.5952—1	
1 sq centimeter	0.1550 sq in.	Log 0.1904—1	
1 millimeter	0.03937 in.	Log 0.5952—2	
1 sq millimeter	0.00155 sq in.	Log 0.1904—3	
1 kilogram	2.2046 pounds	Log 0.3433	
1 kg per meter	0.672 lb per ft	Log 0.8274—1	
1 kg per sq meter	0.2048 lb per sq ft	Log 0.3113—1	
1 kg per sq cm	14.22 psi	Log 1.1529	

English to Metric System

1 inch	2.540 cm	Log 0.4048	25.40 millimeters	Log 1.4048
1 sq inch	6.450 sq cm	Log 0.8096	645.0 sq mm	Log 2.8096
1 foot	30.48 cm	Log 1.4840	0.3048 meters	Log 0.4840—1
1 sq ft	929.0 sq cm	Log 2.9680	0.0929 sq meters	Log 0.9680—2

1 pound	0.4536 kg	Log 0.6567—1
1 lb per ft	1.488 kg per meter	Log 0.1727
1 lb per sq ft	4.883 kg per sq meter	Log 0.6887
1 lb per sq in.	0.07031 kg per sq cm	Log 0.8471—2

Inches to Feet

1 inch =0.08333 feet	Log 0.9208—2
1 sq in.=0.006944 sq ft	Log 0.8416—3
1 cu in.=0.0005787 cu ft	Log 0.7624—4

Feet to Inches

1 foot = 12 inches	Log 1.0792
1 sq ft= 144 sq in.	Log 2.1584
1 cu ft=1,728 cu in.	Log 3.2376

Formulas involving π

$\pi = 3.1416$	Log 0.4971	πr^2 = area of circle; $\pi r^2 h$ = volume of cylinder
$\frac{1}{4}\pi = 0.7854$	Log 0.8951—1	$\frac{1}{4}\pi d^2$ = area of circle; $\frac{1}{4}\pi d^2 h$ = volume of cylinder
$\frac{1}{3}\pi = 1.0472$	Log 0.0200	$\frac{1}{3}\pi r^2 h$ = volume of right circular cone
$\frac{1}{12}\pi = 0.2618$	Log 0.4179—1	$\frac{1}{12}\pi d^2 h$ = volume of right circular cone
$\frac{4}{3}\pi = 4.1888$	Log 0.6221	$\frac{4}{3}\pi r^3$ = volume of sphere
$\frac{1}{6}\pi = 0.5236$	Log 0.7190—1	$\frac{1}{6}\pi d^3$ = volume of sphere

Feet to Inches

$\pi \times 12 \times 1$ foot = 37.70 in.	Log 1.5763
$\pi \times 144 \times 1$ sq ft = 452.4 sq in.	Log 2.6555
$\pi \times 1{,}728 \times 1$ cu ft = 5,429 cu in.	Log 3.7347
$\frac{4}{3}\pi \times 1{,}728 \times 1$ cu ft = 7,240 cu in.	Log 3.8597
$\frac{1}{3}\pi \times 1{,}728 \times 1$ cu ft = 1,810 cu in.	Log 3.2576

Inches to Feet

$\pi \div$ 12 inches = 0.2618 feet	Log 0.4179—1
$\pi \div$ 144 sq in. = 0.02181 sq ft	Log 0.3387—2
$\pi \div 1{,}728$ cu in. = 0.001818 cu ft	Log 0.2595—3
$\frac{4}{3}\pi \div 1{,}728$ cu in. = 0.002424 cu ft	Log 0.3845—3
$\frac{1}{3}\pi \div 1{,}728$ cu in. = 0.000606 cu ft	Log 0.7824—4

To find areas and volumes by the formulas given above, select the proper constant from those given at left and multiply it by the radius raised to the required power. Example: Volume of a sphere with a radius of 10 in. = $10^3 \times 0.002424$ cu ft = 2.424 cu ft. Conversion is made automatically from inches to feet or vice versa.

Measures of Volume

1 U.S. gallon=231 cu in.=0.1337 cu ft=0.00495 cu yd=3,785.3 cu cm
1 cu in.=0.004329 gal=0.0005787 cu ft=16.39 cu cm
1 cu ft=1,728 cu in.=7.48052 gal=0.03704 cu yd=0.02831 cu meters= 28,310 cu cm
1 cu yd=46,656 cu in.=202.0 gal=27 cu ft=0.7643 cu meters

1 cu meter=61,025 cu in.=264.2 gal=35.32 cu ft=1.308 cu yd=1,000,000 cu cm
1 liter=1,000 cu cm=61.03 cu in.=0.2642 gal
1 cu cm=0.06103 cu in.=0.000001 cu meter=1,000 cu mm
1 cu mm=0.00006103 cu in.=0.001 cu cm

FACT FILE—1955

WITH this issue, the 13th edition of WELDING ENGINEER's Welding Guide and Product Directory, the name has been changed to the WELDING ENGINEER Fact File Issue.

The reason for the change—it is our feeling that Fact File more accurately describes the contents of this bonus issue of WELDING ENGINEER.

The Fact File Issue places at the fingertips of the reader a combination of an accurate and complete Buyer's Guide of product listings, and a Reference Data section of short-cut tables and other units of useful technical and engineering data.

Another change that has been made in the development of the Fact File is the manner in which product listings are presented. Product listings have been grouped into ten major classifications to conform with the newly developed standards of the National Welding Supply Association.

NWSA has developed an Index and Tab System in an effort to standardize the filing of catalogs and price sheets. Such standards are needed!

Not until an industry develops a satisfactory and uniform system of cataloging the product used by its customers will it be able to grow as it should. There are many factors which tend to roadblock the use of welding but a lack of adequate indexing and cataloging can no longer be included as one of these.

Defects Are Noted

In any new system of this type, however, there are bound to be certain factors which lead to confusion. Unfortunately, these defects will appear in this Fact File Issue, but at the same time it will give us an opportunity to test the system over a far wider audience in a shorter period of time than NWSA would be able to do in years.

Since this is a test of a new system of product listings, won't you let us have your reactions? In working over the galleys to produce this issue, we found many product listings that were difficult to classify to our entire satisfaction.

These generally dealt with those items on which the NWSA was quite vague. In some instances, we refused to "conform" because the listing seemed to be completely misplaced. Will you tell us what you think of our placement?

In addition to those hard-to-place products, there were other products which are important to WELDING ENGINEER readers, but which have little or no place in the operations of the welding supply distributor. Such a status applies to materials—the metals that are welded.

Materials, the base metals or plastics needed for fabrication of a weldment, are rarely sold by the welding distributor. Consequently, no provision has been made for materials in the NWSA index system.

Added Classification

Materials and their sources are very important to many readers of WELDING ENGINEER, so a "Material" classification had to be added to the Fact File listings.

In the NWSA classification, hand tools are found under both "Miscellaneous welding items" and "Non-welding items"; automatic inert equipment is under "Inert-gas equipment," though there is an "Automatic equipment" classification.

Such discrepancies are confusing, to say the least. In such instances, the Fact File Issue has done its best to place products properly.

Through this initial pre-test and our reader's reaction, WELDING ENGINEER will be able to go to NWSA with thoughts and ideas for improvement that may be incorporated into future revisions of this standard.

Along with the product listings will be found data sheets of pertinent information applying to a specfic product classification. Treatment of this nature has been welcome in the past. It is our hope that material included in this Fact File Issue will prove to be even more valuable to our readers.

These data sheets have been selected from those published monthly in WELDING ENGINEER on the basis of providing ready-reference material on many important phases of welding. We would appreciate suggestions from our readers as to how we may make this section of our Fact File Issue even more useful.

Most Complete Listing

The list of tradenames included in this issue has been greatly expanded to make it the most complete tradename listing of the welding industry ever compiled. The same is true of the "Manufacturers' names and address list."

In the NWSA Index and Tab System, the first major classification is "Administrative." Since the section deals with policy rather than products, it has been omitted from this Fact File Issue.

The classifications which have been included are listed below. They have been supplemented by one listing not found in the NWSA system: "Materials." The major product classifications are:

Gases
Gas equipment
Arc Equipment
Automatic equipment
Inert-gas equipment
Filler metals and fluxes
Resistance equipment
Miscellaneous welding items
Safety and medical equipment
Industrial equipment (non-welding items)
Materials

Decimal Equivalents

for Fractional Parts of a Foot

1/2's	1/4's	1/8's	1/16's	1/32's	1/64's	0"	1"	2"	3"	4"	5"	6"	7"	8"	9"	10"	11"
					0	.0000	.0833	.1667	.2500	.3333	.4167	.5000	.5833	.6667	.7500	.8333	.9167
					1	.0013	.0846	.1680	.2513	.3346	.4180	.5013	.5846	.6680	.7513	.8346	.9180
				1	2	.0026	.0859	.1693	.2526	.3359	.4193	.5026	.5859	.6693	.7526	.8359	.9193
					3	.0039	.0872	.1706	.2539	.3372	.4206	.5039	.5872	.6706	.7559	.8372	.9206
			1	2	4	.0052	.0885	.1719	.2552	.3385	.4219	.5052	.5885	.6719	.7552	.8385	.9219
					5	.0065	.0898	.1732	.2565	.3398	.4232	.5065	.5898	.6732	.7565	.8398	.9232
				3	6	.0078	.0911	.1745	.2578	.3411	.4245	.5078	.5911	.6745	.7578	.8411	.9245
					7	.0091	.0924	.1758	.2591	.3424	.4258	.5091	.5924	.6758	.7591	.8424	.9258
		1	2	4	8	.0104	.0938	.1771	.2604	.3438	.4271	.5104	.5938	.6771	.7604	.8438	.9271
					9	.0117	.0951	.1784	.2617	.3451	.4284	.5117	.5951	.6784	.7617	.8451	.9284
				5		.0130	.0964	.1797	.2630	.3464	.4297	.5130	.5964	.6797	.7630	.8464	.9297
					11	.0143	.0977	.1810	.2643	.3477	.4310	.5143	.5977	.6810	.7643	.8477	.9310
			3	6		.0156	.0990	.1823	.2656	.3490	.4323	.5156	.5990	.6823	.7656	.8490	.9323
					13	.0169	.1003	.1836	.2669	.3503	.4336	.5169	.6003	.6836	.7669	.8503	.9336
				7		.0182	.1016	.1849	.2682	.3516	.4349	.5182	.6016	.6849	.7682	.8516	.9349
					15	.0195	.1029	.1862	.2695	.3529	.4362	.5195	.6029	.6862	.7695	.8529	.9362
	1	2	4	8		.0208	.1042	.1875	.2708	.3542	.4375	.5208	.6042	.6875	.7708	.8542	.9375
					17	.0221	.1055	.1888	.2721	.3555	.4388	.5221	.6055	.6888	.7721	.8555	.9388
				9		.0234	.1068	.1901	.2734	.3568	.4401	.5234	.6068	.6901	.7734	.8568	.9401
					19	.0247	.1081	.1914	.2747	.3581	.4414	.5247	.6081	.6914	.7747	.8581	.9414
			5	10		.0260	.1094	.1927	.2760	.3594	.4427	.5260	.6094	.6927	.7760	.8594	.9427
					21	.0273	.1107	.1940	.2773	.3607	.4440	.5273	.6107	.6940	.7773	.8607	.9440
				11		.0286	.1120	.1953	.2786	.3620	.4453	.5286	.6120	.6953	.7786	.8620	.9453
					23	.0299	.1133	.1966	.2799	.3633	.4466	.5299	.6133	.6966	.7799	.8633	.9466
		3	6	12		.0313	.1146	.1979	.2813	.3646	.4479	.5313	.6146	.6979	.7813	.8646	.9479
					25	.0326	.1159	.1992	.2826	.3659	.4492	.5326	.6159	.6992	.7826	.8659	.9492
				13		.0339	.1172	.2005	.2839	.3672	.4505	.5339	.6172	.7005	.7839	.8672	.9505
					27	.0352	.1185	.2018	.2852	.3685	.4518	.5352	.6185	.7018	.7852	.8685	.9518
			7	14		.0365	.1198	.2031	.2865	.3698	.4531	.5365	.6198	.7031	.7865	.8698	.9531
					29	.0378	.1211	.2044	.2878	.3711	.4544	.5378	.6211	.7044	.7878	.8711	.9544
				15		.0391	.1224	.2057	.2891	.3724	.4557	.5391	.6224	.7057	.7891	.8724	.9557
					31	.0404	.1237	.2070	.2904	.3737	.4570	.5404	.6237	.7070	.7904	.8737	.9570
1	2	4	8	16		.0417	.1250	.2083	.2917	.3750	.4583	.5417	.6250	.7083	.7917	.8750	.9583
					33	.0430	.1263	.2096	.2930	.3763	.4596	.5430	.6263	.7096	.7930	.8763	.9596
				17		.0443	.1276	.2109	.2943	.3776	.4609	.5443	.6276	.7109	.7943	.8776	.9609
					35	.0456	.1289	.2122	.2956	.3789	.4622	.5456	.6289	.7122	.7956	.8789	.9622
			9	18		.0469	.1302	.2135	.2969	.3802	.4635	.5469	.6302	.7135	.7969	.8802	.9635
					37	.0482	.1315	.2148	.2982	.3815	.4648	.5482	.6315	.7148	.7982	.8815	.9648
				19		.0495	.1328	.2161	.2995	.3828	.4661	.5495	.6328	.7161	.7995	.8828	.9661
					39	.0508	.1341	.2174	.3008	.3841	.4674	.5508	.6341	.7174	.8008	.8841	.9674
		5	10	20		.0521	.1354	.2188	.3021	.3854	.4688	.5521	.6354	.7188	.8021	.8854	.9688
					41	.0534	.1367	.2201	.3034	.3867	.4701	.5534	.6367	.7201	.8034	.8867	.9701
				21		.0547	.1380	.2214	.3047	.3880	.4714	.5547	.6380	.7214	.8047	.8880	.9714
					43	.0560	.1393	.2227	.3060	.3893	.4727	.5560	.6393	.7227	.8060	.8893	.9727
			11	22		.0573	.1406	.2240	.3073	.3906	.4740	.5573	.6406	.7240	.8073	.8906	.9740
					45	.0586	.1419	.2253	.3086	.3919	.4753	.5586	.6419	.7253	.8086	.8919	.9753
				23		.0599	.1432	.2266	.3099	.3932	.4766	.5599	.6432	.7266	.8099	.8932	.9766
					47	.0612	.1445	.2279	.3112	.3945	.4779	.5612	.6445	.7279	.8112	.8945	.9779
	3	6	12	24		.0625	.1458	.2292	.3125	.3958	.4792	.5625	.6458	.7292	.8125	.8958	.9792
					49	.0638	.1471	.2305	.3138	.3971	.4805	.5638	.6471	.7305	.8138	.8971	.9805
				25		.0651	.1484	.2318	.3151	.3984	.4818	.5651	.6484	.7318	.8151	.8984	.9818
					51	.0664	.1497	.2331	.3164	.3997	.4831	.5664	.6497	.7331	.8164	.8997	.9831
			13	26		.0677	.1510	.2344	.3177	.4010	.4844	.5677	.6510	.7344	.8177	.9010	.9844
					53	.0690	.1523	.2357	.3190	.4023	.4857	.5690	.6523	.7357	.8190	.9023	.9857
				27		.0703	.1536	.2370	.3203	.4036	.4870	.5703	.6536	.7370	.8203	.9036	.9870
					55	.0716	.1549	.2383	.3216	.4049	.4883	.5716	.6549	.7383	.8216	.9049	.9883
		7	14	28		.0729	.1563	.2396	.3229	.4063	.4896	.5729	.6563	.7396	.8229	.9063	.9896
					57	.0742	.1576	.2409	.3242	.4076	.4909	.5742	.6576	.7409	.8242	.9076	.9909
				29		.0755	.1589	.2422	.3255	.4089	.4922	.5755	.6589	.7422	.8255	.9089	.9922
					59	.0768	.1602	.2435	.3268	.4102	.4935	.5768	.6602	.7435	.8268	.9102	.9935
			15	30		.0781	.1615	.2448	.3281	.4115	.4948	.5781	.6615	.7448	.8281	.9115	.9948
					61	.0794	.1628	.2461	.3294	.4128	.4961	.5794	.6628	.7461	.8294	.9128	.9961
				31		.0807	.1641	.2474	.3307	.4141	.4974	.5807	.6641	.7474	.8307	.9141	.9974
					63	.0820	.1654	.2487	.3320	.4154	.4987	.5820	.6654	.7487	.8320	.9154	.9987

GASES

For years the gases used in welding were only two—oxygen and acetylene—though in some flame-cutting operations, acetylene was replaced by hydrogen, city gas or LP (liquefied petroleum) gas.

Oxygen and acetylene still are extremely important wherever metals are joined or severed, but they have now been joined by argon, helium and carbon dioxide as used in Mig (metal inert-gas) and Tig (tungsten inert-gas) welding.

Gases represent an important segment of the welding supply business. Last year, sales of oxygen and acetylene alone totaled $322,000,000—more than 60% of the total welding market. Because of this, gases comprise the initial classification of the new Welding Supply Index and Tab System of the National Welding Suppliers Ass'n.

This group carries sub-heading numbers 100-199. The established categories of the subheadings are:

110 General data
120 Cylinders and containers
130 Price and policy
140 Demurrage and leases
160 Calcium carbide
180 Miscellaneous

ACETYLENE

Acetylene Gas Company, St. Louis, Mo.
Acetylene Service Co., Denver, Colo.
Air Products, Inc., Allentown, Pa.
Air Reduction Sales Co., Div., Air Reduction Co., Inc., New York, N. Y.
Alabama Oxygen Co., Birmingham, Ala.
Alaska Oxygen Co., Fairbanks, Alaska
Aldan Oxygen Mfg. Co., Inc., Collingdale, Pa.
American Compressed Gas Products, Inc., Ft. Wayne, Ind.
American Gas & Chemical Co., Harrison, N. J.
American Oxygen Service Corp., Harrison, N. J.
Atlas Acetylene Co., Kearney, N. J.
Balbach Co., The, Omaha, Neb.
Big Three Welding Equip. Co., Ft. Worth, Texas
Bird Gas Corp., Detroit, Mich.
Buckeye Oxygen Co., Canton, Ohio
Burdett Oxygen Co., The, Cleveland, Ohio
California Oxygen Co., Sacramento, Cal.
Cia. Productora De Oxigeno, S. A., Monterrey, Mexico
Commercial Gas Corp., Wilkes-Barre, Pa.
Commonwealth Prods. Co. de Mexico, S. A., Mexico D. F.
Compania Mexicana AGA, S. A., Mexico 1, D.F.
Compania Mexicana De Soldadura Autogena, S.A., Mexico
Corpus Christi Oxygen Co., Corpus Christi, Texas
W. C. DeLille Co., Columbus, Ohio
Delta Oxygen Co., Memphis, Tenn.
Denver Oxygen Co., Inc., The, Denver, Colo.
Dye Oxygen Co., Inc., Phoenix, Ariz.
Thomas A. Edison, Inc., Stuyvesant Falls, N. Y.
Gases Industriales, S.A., San Luis Potosi, S.L.P., Mexico
Gulf Oxygen Co., Inc., Lake Charles, La.
Gaspro, Ltd., Honolulu, T.H.
Houston Oxygen Co., Houston, Tex.
Independent Engineering Co., O'Fallon, Ill.
Indiana Oxygen Co., Indianapolis, Ind.
Industrial Air Products Co., Portland, Ore.
Inland Oxy-Acetylene Co., Inc.
Kansas Oxygen Div., Krause Plow Corp., Hutchinson, Kansas
Keenan Welding Supplies Co., Albany, Ga.
Linde Air Products Co., A Unit of Union Carbide & Carbon Corp., New York 17, N. Y.
Liquid Carbonic Corp., Chicago, Ill.
Maine Industrial Gas Co., Lewiston, Me.
Maine Oxyacetylene Co., Auburn, Me.
Marks Oxygen Co., Augusta, Ga.
McDonald Co., B. F., Los Angeles, Cal.
National Welders Supply Co., Charlotte, N. C.
New England Gas Products, Inc., Charlestown, Mass.
National Cylinder Gas Co., Chicago 11, Ill.
Oklahoma Oxygen Co., Tulsa, Okla.
Oxigeno de Tampico, S.A., Tampico, Tamps., Mexico
Pacific Acetylene Co., San Diego, Calif.
Pacific Oxygen Co., Oakland, Calif.
Puritan Compressed Gas Corp., Kansas City, Mo.
Sabine Oxygen Co., Port Arthur, Texas
Sierra Oxygen Co., Reno, Nevada
Southern Oxygen Co., Washington, D.C.
Steele Gases Inc., Chicago, Ill.
Stewart Oxygen Co., San Francisco, Cal.
Superior Air Products Co., Newark, N. J.
Superior Industrial Gas Corp., Astoria, N. Y.
Superior Oxy-Acetylene Machine Co., Hamilton, Ohio
Tex-Air Gas Co., Inc., Amarillo, Texas
Trinity Oxygen Co., Ft. Worth, Texas
Valley Oxygen Co., Bay City, Mich.
Valley Oxygen Co., Hanford, California
Welders Supply Co., Little Rock, Ark.
Welding Gas Products Co., Chattanooga, Tenn.
Welding & Industrial Prods., Ltd., Honolulu, T.H.
Welding Materials Inc., Lemoyne, Pa.
West Texas Oxygen Co., Lubbock, Tex.
Western Oxygen Inc., Seattle, Wash.
Whitmore Oxygen Co., Salt Lake City, Utah
Wolverine Gas Products, Inc., Saginaw, Mich.

ACETYLENE CYLINDERS

Aetna Cylinders, Inc., Detroit, Mich.
American Gas & Chemical Corp., Harrison, N. J.
American Oxygen Service Corp., Harrison, N. J.
Burdett Oxygen Co., Cleveland, Ohio
Compressed Gas Cylinders, Inc., Vernon, Calif.
Coyne Cylinder Co., San Francisco, Calif.
Gellid Engineering Corp., Oak Park, Ill.
Harrisburg Steel Corp., Harrisburg, Pa.
Independent Engineering Co., O'Fallon, Ill.
Linde Air Products Co., The, Unit of Union Carbide and Cabon Corp., New York, N. Y.
Modern Engineering Co., Inc., St. Louis, Mo.
National Cylinder Gas Co., Chicago, Ill.
National Tube Co., Div. of U. S. Steel Corp., Pittsburgh, Pa.
Norris-Thermador Corp., Los Angeles, Calif.
Pressed Steel Tank Co., Milwaukee, Wis.
Superior Industrial Gas Corp., Astoria, N. Y.
Taylor Cylinder Div., Cuneo Press, Chicago, Ill.
Wall Colmonoy Corp., Detroit, Mich.

ARGON, Compressed

Air Reduction Sales Co., New York, N. Y.
American Gas & Chemical Corp., Harrison, N. J.
American Oxygen Service Corp., Harrison, N. J.
Buckeye Oxygen Co., Canton, Ohio
Burdett Oxygen Co., Cleveland, Ohio
Commercial Gas Corp., Wilkes-Barre, Pa.
Houston Oxygen Co., Houston, Texas
Independent Engineering Co., Inc., O'Fallon, Ill.
Linde Air Products Company, A Unit of Union Carbide and Carbon Corp., New York 17, N. Y.
National Cylinder Gas Co., Chicago, Ill.
New England Gas Products, Inc., Charlestown, Mass.
Southern Oxygen Co., Washington, D.C.
Superior Industrial Gas Corp., Astoria, N. Y.

CALCIUM CARBIDE

Air Reduction Sales Co., New York, N. Y.
American Carbide & Chem. Co., St. Louis, Mo.
Linde Air Products Co., a Unit of Union Carbide and Carbon Corp., New York 17, N. Y.
Liquid Carbonic Corp., Chicago, Ill.
Midwest Carbide Corp., Keokuk, Iowa
National Carbide Co., Div. of Air Reduction Co., Inc., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Pacific Carbide & Alloys Co., Portland, Ore.
Shawinigan Products Corp., New York, N. Y.

CARBON DIOXIDE
(Welding grade)

Acetylene Gas Co., St. Louis, Mo.
Air Reduction Sales Co., New York, N. Y.
Burdett Oxygen Co., The, Cleveland, Ohio
Independent Engineering Co., O'Fallon, Ill.
Linde Air Products Co., New York, N. Y.
Liquid Carbonic Corp., Chicago, Ill.

(Continued on next page)

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Specify COYNE Cylinders

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Memphis 9, Tenn.

CARBON DIOXIDE

(Continued from page 11)

National Cylinder Gas Co., Chicago, Ill.
Southern Oxygen Co., Washington, D. C.
Superior Air Products Co., Newark, N. J.
Wolverine Gas Products, Inc., Saginaw, Mich.

CYLINDER CAPS

Coyne Cylinder Co., Memphis, Tenn.
Harrisburg Steel Corp., Harrisburg, Pa.
Independent Engineering Co., Inc., O'Fallon, Ill.
Norris-Thermador Corp., Los Angeles, Calif.
Taylor-Wharton Iron & Steel Co., Cincinnati, Ohio

HELIUM, Compressed

Air Reduction Sales Co., New York, N. Y.
Amer. Gas & Chemical Corp., Harrison, N. J.
American Oxygen Service Corp., Harrison, N. J.
Buckeye Oxygen Co., Canton, Ohio
Burdett Oxygen Co., The, Cleveland, Ohio
Commercial Gas Corp., Wilkes-Barre, Pa.
Industrial Air Prod. Co., Portland, Ore.
Linde Air Products Company, A Unit of Union Carbide and Carbon Corp., New York 17, N. Y.
Liquid Carbonic Corp., Industrial Gas Div., Chicago, Ill.
National Cylinder Gas Co., Chicago, Ill.
National Welders Supply Co., Inc., Charlotte, N. C.
New England Gas Products, Inc., Charlestown, Mass.
Southern Oxygen Co., Washington, D. C.
Steele Gases, Inc., Chicago, Ill.
Stuart Oxygen Co., San Francisco, Calif.
Welding Materials, Inc., Lemoyne, Pa.

HYDROGEN, Compressed

Air Reduction Sales Co., Div., Air Reduction Co., Inc., New York, N. Y.
American Gas & Chemical Corp., Harrison, N. J.
American Oxygen Service Corp., Harrison, N. J.
Burdett Oxygen Co., Cleveland, Ohio
Commercial Gas Corp., Wilkes-Barre, Pa.
Independent Engineering Co., Inc., O'Fallon, Ill.
Linde Air Products Company, a unit of Union Carbide and Carbon Corp., New York 17, N. Y.
Liquid Carbonic Corp., Chicago, Ill.
National Cylinder Gas Co., Chicago, Ill.
New England Gas Products, Inc., Charlestown, Mass.
Southern Oxygen Company, Bladensburg, Maryland
Steele Gases, Inc., Chicago, Ill.
Stuart Oxygen Co., San Francisco, Calif.
Superior Industrial Gas Corp., Astoria, N. Y.
Welding Materials, Inc., Lemoyne, Pa.
Western Oxygen, Inc., Seattle 4, Wash.

OXYGEN, Compressed

Acetylene Gas Co., St. Louis, Mo.
Acetylene Service Co., Denver, Colo.
Air Products, Inc., Allentown, Pa.
Air Reduction Sales Co., New York, N. Y.
Alabama Oxygen Co., Birmingham, Ala.
Alaska Oxygen Co., Fairbanks, Alaska
Aldan Oxygen Mfg. Co., Inc., Collingdale, Pa.
American Compressed Gas Products, Inc., Ft. Wayne, Ind.
American Gas & Chemical Co., Harrison, N. J.
American Oxygen Service Corp., Harrison, N. J.
Atlas Acetylene Co., Kearney, N. J.
Balbach Co., The, Omaha, Nebr.
Big Three Welding Equipment Co., Ft. Worth, Texas
Bird Gas Corp., Detroit, Mich.
Burdett Oxygen Co., Cleveland, Ohio
Buckeye Oxygen Co., Canton, Ohio
California Oxygen Co., Sacramento, Cal.
Cia. Productora De Oxigeno, S.A., Monterrey, Mexico
Commercial Gas Corp., Wilkes-Barre, Pa.
Commonwealth Prods., Co. de Mexico, S.A., Mexico, D.F.
Compania Mexicana AGA, S.A., Mexico, D.F.
Compania Mexicana De Soldadura Autogena, S.A., Mexico
Corpus Christi Oxygen Co., Corpus Christi, Texas
Delta Oxygen Co., Memphis, Tenn.
W. C. DeLille Co., Columbus, Ohio
Dye Oxygen Co., Inc., Phoenix, Ariz.
Denver Oxygen Co., Inc., The, Denver, Colo.
Thomas A. Edison, Inc., Stuyvesant Falls, N. Y.
Gases Industriales, S.A., San Luis Potosi, Mexico
Gulf Oxygen Co., Inc., Lake Charles, La.
Gaspro, Ltd., Honolulu T.H.
Houston Oxygen Co., Houston, Tex.
Independent Engineering Co., O'Fallon, Ill.
Indiana Oxygen Co., Indianapolis, Ind.
Industrial Air Products Co., Portland, Ore.
Inland Oxy-Acetylene Co., Inc.
Kansas Oxygen Div., Krause Plow Corp., Hutchinson, Kansas
Keenan Welding Supplies Co., Albany, Ga.

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Liquid Carbonic Corp., Chicago, Ill.
Maine Industrial Gas Co., Lewiston, Me.
Maine Oxyacetylene Co., Auburn, Me.
Marks Oxygen Co., Augusta, Ga.
McDonald Co., B. F., Los Angeles, Cal.
National Cylinder Gas Co., Chicago 11, Ill.
National Welders Supply Co., Charlotte, N. C.
New England Gas Products, Inc., Charlestown, Mass.
Oklahoma Oxygen Co., Tulsa, Okla.
Oxigeno de Tampico, S.A., Tampico, Tamps., Mexico
Pacific Acetylene Co., San Diego, Calif.
Pacific Oxygen Co., Oakland, Calif.
Puritan Compressed Gas Corp., Kansas City, Mo.
Sabine Oxygen Co., Port Arthur, Texas
Sierra Oxygen Co., Reno, Nevada
Southern Oxygen Co., Washington, D. C.
Steele Gases Inc., Chicago, Ill.
Stewart Oxygen Co., San Francisco, Cal.
Superior Air Products Co., Newark, N. J.
Superior Industrial Gas Corp., Astoria, N. Y.
Superior Oxyacetylene Machine Co., Hamilton, Ohio
Tex-Air Gas Co., Inc., Amarillo, Texas
Trinity Oxygen Co., Ft. Worth, Texas
Valley Oxygen Co., Bay City, Mich.
Valley Oxygen Co., Hanford, Cal.
Welders Supply Co., Little Rock, Ariz.
Welding Gas Products Co., Chattanooga, Tenn.
Welding & Industrial Prods., Ltd., Honolulu, T.H.
West Texas Oxygen Co., Lubbock, Tex.
Western Oxygen Inc., Seattle, Wash.
Whitmore Oxygen Co., Salt Lake City, Utah
Wolverine Gas Products, Inc., Saginaw, Mich.

OXYGEN CYLINDERS

American Gas & Chemical Corp., Harrision, N. J.
American Oxygen Service Corp., Harrison, N. J.
Anker Holth Division of Wellman Engineering Co., Port Huron, Mich.
Bellows Co., Akron, Ohio
Blackhawk Mfg. Co., Milwaukee, Wis.
Burdett Oxygen Co., Cleveland, Ohio
Galland-Henning Mfg. Co., Milwaukee, Wis.
Gellid Engineering Corp., Oak Park, Ill.
Hanna Engineering Works, Chicago, Ill.
Harrisburg Steel Corp., Harrisburg, Pa.
Independent Engrg. Co., O'Fallon, Ill.
Linde Air Products Co., The, Unit of Union Carbide and Carbon Corp., New York, N. Y.
Marison Co., The, So. Elgin, Ill.
Modern Engineering Co., Inc., St. Louis, Mo.
Nageldinger & Sons, Inc., J., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
National Tube Co., Div. of U. S. Steel Corp., Pittsburgh, Pa.
Norris-Thermador Corp., Los Angeles, Calif.
Pressed Steel Tank Co., Milwaukee, Wis.
Rex Welder & Engineering Co., Kansas City, Mo.
Rivett Lathe & Grinder, Inc., Brighton, Mass.
Superior Industrial Gas Corp., Astoria, N. Y.
Taylor-Wharton Iron & Steel Co., Cincinnati, O.

PROPANE CYLINDERS

American Oxygen Service Corp., Harrison, N. J.
Burdett Oxygen Co., Cleveland, Ohio
Compressed Gas Cylinders, Inc., Vernon, Calif.
Goss Gas, Inc., Glenshaw, Pa.
Harrisburg Steel Corp., Harrisburg, Pa.
Linde Air Products Co., The, Unit of Union Carbide and Carbon Corp., New York, N. Y.
Marison Co., The, So. Elgin, Ill.
National Tube Co., Div. of U. S. Steel Corp., Pittsburgh, Pa.
Norris-Thermador Corp., Los Angeles, Calif.
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INDEPENDENT Acetylene Cylinders take from 5 to 10% more gas. Uniformity of monolithic filler insures even distribution of acetone. Storage cylinders available in 12' and 20' lengths, of 850 and 1,500 cu. ft. capacities.

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We Invite Your Inquiries

Cutting-Tip Numbers Compared by Drill Size of Cutting-Oxygen Orifice

(When cleaning tips, it is recommended that one size smaller drill be used)

Tradename	Series	79	77	75	73	71	69	67	65	63	61	59	57	55	53	52	50
DRILL SIZE ➧		80 78	76		74 72	70		68 66	64		62 60	58		56 54	¼"		51 49
Airco	124, 144, 164 195, 198, 199							00			0			1 2		3	4
Craftsman	B										1			2	3		4
Dockson	All										1			2			3
Gasweld	HC-31, HC-32, HC-39 WC-20[1], WC-35[1] WC-10[1], WC-55[1]						00	0 0			1	2		1		2	
Harris	2890-F 6290 7490-A					00		00	0		0 00	0		1 1 1 2		2	2 3
K-G	M4, M5							68[7]			62			56	53		50
Marquette	E[1] C, D[1], D1[1,3] C, D[1], D1[1,4]								1B		2B 0A 0A			1A 1A		2A	2A
Meco	All							0[3]					1	2			
Milburn	X-100 X-2000 X-2300									00 00	0 0		1 1	1 2 2		2	3 3
National	All										0		1	2			3
Oxweld	CW-29[1] CW-23[1], C-31, C-32		2 2					3			4 4				6		
Prest-O-Weld	CW-109[1] CW-110[1], C-111								0		1 1				2		
Purox	33[1] 34, 35							0			1 1			2			3
Rego	All							68			62			56	53		51
Smith	Lifetime, Longlife[1,3] Lifetime, Longlife[1,4] Airline[1], Midline[1]								0 1		0 2			1 2 1 3 5		3 2 4	
Torchweld	280, 250, 251							68[6]			62			56	53		51
Victor	All				000				00			0		1		2	3
Weldit	S-25, S-37, S-45													1	2		

Tradename	Series	47	45	43	41	39	37	35	33	31	¼"	29	27	25	23	21	19	17
DRILL SIZE ➧		48 46	44		42 40	38		36 34	32		30		28 26	24		22 20	18	
Airco	124, 144, 164, 195, 198, 199		5		6			7			8		9				10[7]	
Craftsman	B		5		6			7										
Dockson	All			4				5		6			7 8					
Gasweld	HC-31, HC-32, HC-39, WC-20[1], WC-35[1]		3					4 5										
Harris	2890-F 6290 7490-A		3 3		4			4 4 5		5	5 6							
K-G	M4, M5 M6		45		40			35			30			25				
Marquette	C, D[1], D1[1,3] C, D[1], D1[1,4]			3A		3A	4A[8]				4A 5A		6A					
Meco	All			3				4			5	6						
Milburn	X-100 X-2000 X-2300	3 4	4 5 4		5 6 6 5		7 7	8 8 6		9	10 11 7	12	8			9		10 11[9]
National	All	4			5		6			7	8							
Oxweld	CW-23[1], C-31 C-32	8				10				12								
Prest-O-Weld	CW-110[1], C-111	3						4 5										
Purox	35			4														
Rego	All	46			42			35			30			25				
Smith	Lifetime, Longlife[1,3] Lifetime, Longlife[1,4]	4 3			4						5			6				
Torchweld	280, 250, 251	46			42			35			30			25			18[11]	
Victor	All		4		5			6					7					
Weldit	S-25, S-37, S-45			3				4			5							

[1]Cutting Attachment. [2]Applies to M4 only. [3]Preheat: 4 flames. [4]Preheat: 6 flames. [5]Also 00 with 3 flame preheat. [6]Applies to 280 only. [7]Tip size 11 drill size 10; tip 12 drill 2; tip 13 drill ¼" and tip 14 drill L. [8]Remaining tips for C only. [9]Tip 12 drill size 15. [10]Tip next size larger is drill size 12.

Welding Tip Numbers Compared to Drill Size of Orifice

(When cleaning tips, it is recommended that one size smaller drill be used)

DRILL SIZES → / Tradename	Series	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48
Airco	All						00			0				1						2						3		4			5			6
Craftsman	AA									0		1								2								3						4
Dockson	4EC, 4SC, 7SC			1					2							3								4			5			6				7
	7EC			1					2							3								4			5			6				7
Gasweld	G25, G35							00		0			1				2							3			4	5		6				7
	G55	00			0			1					2											3			4	5		6				
	AVG	00			0			1					2									4			5			6		7		8		
Harris	13, 14, 16, 17, 50, 23, 13-F, 23A swedged, 17-F swedged			00			0				1						2							3			4			5	6			7
								00				0				1				2				3		4	5			6			7	
K-G	EUS, KUS, KS						76			72				68						62						56			53			50		
Marquette	A, A1						00					0				1				2				3				4				5		
	B, B1			00B			0B			1B				2B						3B						4B		5B			6B			7B
Meco	All	00				0						1					2								3		4			5				
Milburn	W-200	00		0		1							2							3					4		5				6			7
	W-100										000			00					0						1			2			3			4
	W-600	0000			000			00					0				1			2				3			4		5			6	
National	G	00			0					1						2											3				4			
	P				0					1						2											3				4			
	R						000					00					0					1				2		3						
Oxweld	W-29							1				2					4									6		9	12			15		
	W-17																4									6		9	12			15		20
Prest-O-Weld	W-109						1							2								3				4			5			6		
	W-110, W-111						1				2			3						4					5		6[1]		7			8		
Purox	33	0					1							2								3				4			5			6		
	34								1							2											4					6		
	35															2									3				5					
Rego	GP, GX, GXU, SX									72				68						62				58			55		53			50		
Smith	Lifetime										B60							B61						B62				B63		B64				B65
	No. 5										50							51						52				53		54				55
	No. 2			18		19		A20			A21			A22			A23			A24				A25		A26		A27		A28		A29		A210
Torchweld	GP 570, 870									72				68						62				58			55		53			50		
	170	79				76				72				68						62				58			55		53			50		
	71					76				72				68						62				58			55		53			50		
Victor	All						000		000½			00			00½		0		0½			1			1½	2	2½		3		3½		4	
Weldit	All			00			0				1						2							3			4		5		6			7

DRILL SIZES → / Tradename	Series	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	⅛	30	29	28	27	26	25	24	23	22	21	20	19	18	17
Airco	All				7				8[2]					9						10					11					12[3]			
Craftsman	AA						5					6				7[4]					8												
Dockson	4EC, 4SC, 7SC				8			9					10				11			12		13		14			15						
	7EC				8																												
Gasweld	G25, G35				8		9		10		11		12	13		14		15			16												
	G55				8																												
Harris	13, 14, 16, 17, 50, 23, 23A swedged, 13-F, 17-F swedged			8		9			10																								
		8				9			10								12			15[4]			19			22							
K-G	EUS, KUS, KS			45					40[5]					35						30[6]					25						20		
Marquette	A, A1	6				7			8				9				10XH			11XH			12XH			14XH							
Meco	All	6					7						8								9	10						11				12	
Milburn	W-200				8				9				10					11		12	13				14				15		16		
	W-100			5			6				7		8			9				10		12			13			14		15			
	W-600			7			8							9				10															
National	G		5					6																									
	P		5					6		7			8				9			10												
	R	4				5										6				7	8	9	10	11	12								
Oxweld	W-29		20				30																										
	W-17				30				40											55	70						90						
	W-26																							100						125			150
Prest-O-Weld	W-109	7			8																												
	W-111				9				10				11					12		13													
Purox	33	7			8																												
	34					8							10																				
	35		7							9								11		13							15						
Rego	GP, GX, GXU, SX		46[7]				42						36					31[8]							25					20			
Smith	Lifetime				B66				B67				B68				B69						B610	B611	B612								
	No. 5				56				57																								
Torchweld	GP 570, 870		46				42						36					31[9]							25					20			
	170, 71		46																														
Victor	All					5							6							7	8	9	10	11	12								
Weldit	All				8	9			10		11		12			14				16													

[1] W-110 to No. 6 Tip only. [2] Airco Tip No. 13 = Drill Size No. 10; No. 14 = Drill No. 2; No. 15 = ¼ in. drill. [3] Tips No. 7 and 8 require special gooseneck. [4] 13-F and 17-F Swedged to No. 15 Tip only. [5] EUS to No. 40 Tip only. [6] KUS to No. 30 Tip only. [7] SX to No. 46 Tip only. [8] GXU and GP to No. 31 only. [9] GP 570 toNo. 31 only.

GAS EQUIPMENT

THE general category of gas equipment covers all types of equipment embodying oxacetylene or oxy-fuel gas flame. This includes gas-welding and flame-cutting equipment; flame-treating and flame-cleaning equipment; as well as fuel gas-air equipment for brazing and soldering operations.

Gas production equipment, such as acetylene generators, and gas distribution items (manifolds and piping) and accessories for gas applications also are part of this classification.

In 1954, gas equipment and accessories represented a $37,000,000 market. The sub-headings of the gas equipment (200) group are:

210 Outfits
220 Torches
230 Regulators
240 Gas-air equipment
250 Machines, flame-cutting
260 Generators, acetylene
270 Manifolds and piping
280 Miscellaneous
290 Accessories

To facilitate location of gas-equipment items, they have been listed alphabetically rather than by the above-mentioned NWSA sub-headings.

ACETYLENE GAGES

(See: "Oxygen & Acetylene Gages")

ACETYLENE GENERATORS

Adler Mfg. Co., Chicago, Ill.
Air Products, Inc., Allentown, Pa.
Air Reduction Sales Co., New York, N. Y.
Eagle Welding Equipment Co., Chicago, Ill.
Independent Engineering Co., O'Fallon, Ill.
Linde Air Products Co., The, Unit of Union Carbide and Carbon Corp., New York, N. Y.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Miles, John R. R., Inc., Minneapolis, Minn.
Modern Engineering Co., Inc., St. Louis, Mo.
National Cylinder Gas Co., Chicago 11, Ill.
Port-O-Matic, Inc., Hillsboro, Oregon
Sight Feed Generator Co., The, West Alexandria, Ohio
Smith Welding Equipment Corp., Minneapolis, Minn.
Superior Air Products Co., Newark, N. J.
Superior Oxy-Acetylene Mach. Co., Hamilton, Ohio
Victor Equipment Co., San Francisco, Calif.
Welderz-Frend Generator Co., Lubbock, Texas
Weldit, Inc., Detroit, Mich.

ACETYLENE REGULATOR ADAPTERS

Air Reduction Sales Co., Div., Air Reduction Co., Inc., New York, N. Y.
Burdett Oxygen Co., Cleveland, Ohio
Craftsweld Equipment Corp., Long Island City, N. Y.
Dockson Corp., Detroit, Mich.
Harris Calorific Co., The, Cleveland, Ohio
K-G Equip. Co., Inc., Allentown, Pa.
Linde Air Products Company, A Unit of Union Carbide and Carbon Co., New York 17, N. Y.
Liquid Carbonic Corp., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Metro Manufacturing Co. Long Island City, N. Y.
Milburn, Inc., Alexander, Baltimore, Md.
Miles, John R. R., Inc., Minneapolis, Minn.
Modern Engineering Co., Inc., St. Louis, Mo.
Nageldinger, J. & Son, Inc., New York, N. Y.
National Cylinder Gas Co., Chicago 11, Ill.
National Welding Equip. Co., San Francisco, Calif.
Smith Welding Equipment Corp., Minneapolis, Minn.
Superior Oxy-Acetylene Mach. Co., Hamilton, Ohio
Superior Valve & Fittings Co., Pittsburgh, Pa.
Victor Equipment Co., San Francisco, Calif.
Weldit, Inc., Detroit, Mich

AIR PRESSURE REGULATORS

Air Reduction Sales Co., N. Y., N. Y.
American Oxygen Service Corp., Harrison, N. J.
American Scheeffer & Budenburg Instrument Div., Manning, Maxwell & Moore, Inc., Bridgeport, Conn.
Aro Equipment Corp., The, Bryan, Ohio
Atlas Valve Co., Newark, N. J.
Automatic Temperature Control Co., Inc., Philadelphia, Pa.
Bastian-Blessing Co., The, Chicago, Ill.
Binks Manufacturing Co., Chicago, Ill.
Bristol Co., The, Waterbury, Conn.
Brown, W. R., Corp., Chicago, Ill.
Burdett Oxygen Co., Cleveland, Ohio
Cash, A. W., Valve Mfg. Corp., Decatur, Ill.
Craftsweld Equip. Corp., Long Island City, N. Y.
Cutler-Hammer, Inc., Milwaukee, Wis.
Davis Regulator Co., Chicago, Ill.
DeVilbiss Co., The, Toledo, Ohio
Dockson Corp., Detroit, Mich.
Eclipse Fuel Engineering Co., Rockford, Ill.
Farris Engineering Co., Palisades Park, N. J.
Goss Gas, Inc., Glenshaw, Pa.
Hannifin Corp., Chicago, Ill.
Harris Calorific Co., Cleveland, Ohio
Hoke, Inc., Englewood, N. J.
K-G Equipment Co., Inc., Allentown, Pa.
Kieley & Muller, Inc., North Bergen, N. J.
Leslie Co., Lyndhurst, N. J.
M-B Products, Detroit, Mich.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Mason-Neilan Regulator Co., Boston, Mass.
Milburn Inc., Alexander, Baltimore, Md.
Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.
Modern Engineering Co., Inc., St. Louis, Mo.
Mueller Co., Decatur, Ill.
Nageldinger & Son, Inc., J., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
National Welding Equipment Co., San Francisco, Calif.
Norgren Co., C. A., Denver, Colo.
Oxo Welding Equip. Co., Chicago, Ill.
Paasche Airbrush Co., Chicago, Ill.
Progressive Welder Co., Detroit, Mich.
Reading-Pratt & Cady Division of American Chain & Cable Co., Inc., Reading, Pa.
Schrader's A., Son, Division of Scovill Mfg. Co., Inc., Brooklyn, N. Y.
Smith Welding Equipment Co., Minneapolis, Minn.
Stewart-Warner Corp., Alemite Div., Chicago, Ill.
Studebaker Machine Co., Maywood, Ill.
Superior Oxy-Acetylene Machine Co., The, Hamilton, Ohio
Swartwout Co., The, Cleveland, Ohio
Taylor Instrument Companies, Rochester, N. Y.
Victor Equipment Co., San Francisco, Calif.
Weston Electrical Corp., Newark, N. J.

BLOW PIPES, Brazing

(See: "Brazing Torches")

BLOW TORCHES—Alcohol, Gasoline, Kerosene, Gas

Aeroil Products Co., Inc., South Hackensack, N. J.
Bernz, Otto Co., Inc., Rochester, N. Y.
Clayton & Lambert Mfg. Co., Louisville, Ky.
Clements Mfg. Co., Chicago, Ill.
Diener, Geo. W., Mfg. Co., Chicago, Ill.
Dockson Corp., Detroit, Mich.
Eagle Manufacturing Co., Wellsburg, W. Va.
Gem Manufacturing Co., Pittsburgh, Pa.
Hauck Mfg. Co., Brooklyn 15, N. Y.
Insto-Gas Corp., Detroit, Mich.
Johnson Gas Appliance Co., Cedar Rapids, Iowa
Justrite Manufacturing Co., Chicago, Ill. (Gasoline, benzine and naphtha).
MacLeod Co., The, Cincinnati, Ohio
Marquette Mfg. Co. Inc., Minneapolis, Minn.
Natl. Welding Equip. Co., San Francisco, Cal.
Pressure Products Corp., Skokie, Ill.
Sight Feed Generator Co., The, West Alexandria, Ohio
Smith Corp., A. O., Milwaukee, Wis.
Sterling Utilities Co., Inc., Brooklyn, N. Y.
Torit Manufacturing Co., St. Paul, Minn. (Kerosene only).
Turner Brass Works, The, Sycamore, Ill.
Twentieth Century Mfg. Co., Minneapolis, Minn.
Unique Mfg. Co., Inc., Chicago, Ill.
Victor Equipment Co., San Francisco, Calif.
Weldit, Inc., Detroit, Mich.

BRAZING MACHINES, Gas

(See: "Gas-Brazing Machines")

BRAZING OUTFITS, Gas

Beaverdell Co., Chicago, Ill.
Burdett Oxygen Co., Cleveland, Ohio
Dockson Corp., Detroit, Mich.
Gasflux Co., Mansfield, Ohio
General Scientific Equip. Co., Philadelphia, Pa.
Harris Calorific Co., Cleveland, Ohio
Hoke, Incorporated, Englewood, N. J.
Imperial Brass Mfg. Co., The, Chicago, Ill.
K-G Equip. Co. Inc., Allentown, Pa.
Linde Air Products Co., A Unit of Union Carbide and Carbon Corp., New York 17, N. Y.
Liquid Carbonic Corp., Chicago, Ill.
Marquette Mfg. Co., Minneapolis, Minn.
Milburn, Alexander, Inc., Baltimore, Md.
Modern Engineering Co., Inc., St. Louis, Mo.
Nageldinger & Son, Inc., J., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
National Torch Tip Co., Pittsburgh, Pa.
National Welding Equip. Co., San Francisco, Calif.
Purity Cylinder Gases, Inc., Grand Rapids, Mich.
Ragle Industries, J. M., Kansas City, Mo.
Selas Corp. of America, Philadelphia, Pa.
Sight Feed Generator Co., The, West Alexandria, Ohio
Smith Welding Equipment Corp., Minneapolis, Minn.
Superior Oxy-Acetylene Mach. Co., Hamilton, Ohio
Victor Equipment Co., San Francisco, Calif.

BRAZING and SOLDERING DISPENSERS

All-State Welding Alloys Co., Inc., White Plains, N. Y.
Eutectic Welding Alloy, Flushing, N. Y.
Gasflux Co., The, Mansfield, Ohio

BRAZING TORCHES

Air Reduction Sales Co., New York, N. Y.
Craftsweld Equip. Corp., Long Island City, N. Y.
Dockson Corp., Detroit, Mich.
General Welding & Equip. Co., Boston, Mass.
Goss Gas, Inc., Glenshaw, Pa.
Harris Calorific Co., Cleveland, Ohio
Imperial Brass Mfg. Co., The, Chicago, Ill.
Johnson Gas Appliance Co., Cedar Rapids, Iowa
Linde Air Products Co, The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Liquid Carbonic Corp., The, Wall Chemicals Div., Chicago, Ill.
Marquette Mfg. Co. Inc., Minneapolis, Minn.
Milburn, Inc., Alexander, Baltimore, Md.
Modern Engineering Co., Inc., St. Louis, Mo.
National Cylinder Gas Co., Chicago, Ill.
National Welding Equipment Co., San Francisco, Calif.
Pressure Products Corp., Skokie, Ill.
Purity Cylinder Gases, Inc., Grand Rapids, Mich.
Sight Feed Generator Co., The, West Alexandria, Ohio
Smith Welding Equip. Corp., Minneapolis, Minn.
Superior Oxy-Acetylene Machine Co., The, Hamilton, Ohio
Victor Equipment Co., San Francisco, Calif.
Weldit, Inc., Detroit, Mich.

Dockson
TORCHES
Built for Better Service
The finest equipment for Welding, Cutting or Soldering. Made right . . . Proved right.
DOCKSON CORPORATION
3837 Wabash Detroit 8, Mich.

BURNERS, Annealing and Preheating, Etc.

Air Reduction Sales Co., N. Y., N. Y.
Dockson Corp., Detroit, Mich.
Eclipse Fuel Engineering Co., Rockford, Ill.
Gas Appliance Service, Inc., Chicago, Ill.
Hauck Manufacturing Co., Brooklyn, N. Y.
Hones, Charles A., Inc., Baldwin, L. I.
Johnson Gas Appliance Co., Cedar Rapids, Iowa
Liquid Carbonic Corp., Chicago, Ill.
Macleod Co., The, Cincinnati, Ohio
Mahr Mfg. Co., Div. Diamond Iron Works, Minneapolis, Minn.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Milburn, Alexander, Inc., Baltimore, Md.
Modern Eng. Co., Inc., St. Louis, Mo.
National Cylinder Gas Co., Chicago, Ill.
National Welding Equip. Co., San Francisco, Calif.
Ransome Company, Emeryville, Cal.
Selas Corp. of America, Philadelphia, Pa.
Surface Combustion Corp., Toledo, Ohio
Weldit, Inc., Detroit, Mich.

BURNERS, Gas-Air

Dalweld Co., Mt. Vernon, N.Y.
Dockson Corp., Detroit, Mich.
Eclipse Fuel Engineering Co., Rockford, Ill.
Eisler Engineering Co., Inc., Newark, N. J.
Gas Appliance Service, Inc., Chicago, Ill.
Hauck Mfg. Co., Brooklyn 15, N. Y.
Hones, Charles A., Inc., Baldwin, L. I.
Lindberg Engineering Co., Chicago, Ill.
Liquid Carbonic Corp., The, Chicago, Ill.
Mahr Mfg. Co., Div. Diamond Iron Works, Minneapolis, Minn.
Milburn, Alexander, Inc., Baltimore, Md.
National Welding Equip. Co., San Francisco, Calif.
Sight Feed Generator Co., West Alexandria, Ohio
Victor Equipment Co., San Francisco, Calif.
Weldit, Inc., Detroit, Mich.

BURNERS, Kerosene, Portable

Hauck Manufacturing Co., Brooklyn, N. Y.
Macleod Co., The, Cincinnati, Ohio
Mahr Mfg. Co., Div. Diamond Iron Works, Minneapolis, Minn.
Sandvik Saw & Tool (Division of Sandvik Steel, Inc.), New York, N. Y.

CUTTING MACHINES, Gas

(See: "Flame-Cutting Machines")

CYLINDER TRUCKS

American Metal Prod. Co., Worcester, Mass.
American Oxygen Service Corp., Harrison, N. J.
Dur-A-Bilt Products, Sussex, Wis.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Gar-Bro. Mfg. Co., Los Angeles, Calif.
Gellid Engineering Corp., Oak Park, Ill.
Grand Specialties Co., Chicago, Ill.
Miles, John R. R., Inc., Minneapolis, Minn.
Milwaukee Truck & Caster Corp., Milwaukee, Wis.
National Welders Supply Co., Charlotte, N. C.
Pacific Hardware & Steel Co., Inc., San Jose, Calif.
Pioneer Welding Mfg. Co., Kalamazoo, Mich.
Randall Mfg. Co., North Kansas City, Mo.
Revolvator Co., North Bergen, N. J.
Smith Co., Gordon, Bowling Green, Ky.
Thomas Truck & Caster Co., Keokuk, Iowa
Welded Truck & Specialty, Chicago, Ill.
Weldrite Co., Inc., Long Island City, N. Y.
Will-Weld Mfg. Co., Inc., Omaha, Nebraska
Young, C. W., Mfg. Corp., East Syracuse, N. Y.

DIPPERS, Solder

American Pipe Tool Co., Chicago, Ill.
General Scientific Equip. Co., Philadelphia, Pa.
Harris, Arthur, & Co., Chicago, Ill.

DRILLS, Torch-Tip Cleaning

(See: "Tip-Cleaners")

DUAL PASSAGE WELDING HOSE

Hewitt Rubber Div., Hewitt-Robins, Inc., Buffalo, N. Y.
Quaker Rubber Corp., Philadelphia, Pa.
Raybestos-Manhattan, Inc., Passaic, N. J.
Thermoid Hose Co., Trenton, N. J.

ELECTRONIC CONTROLS, Flame-Cutting

Air Reduction Sales Co., New York, N. Y.
Indiana Oxygen Co., Indianapolis, Ind.
Industrial Scientific Co., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Struthers Wells Corp., Titusville, Pa.
Westinghouse Electric Corp., Pittsburgh, Pa.

FLAME-CUTTING GUIDES

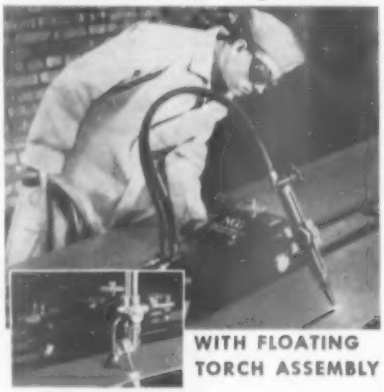
Arcair Co., Lancaster, Ohio
Air Reduction Sales Co., N. Y., N. Y.
American Oxygen Service Corp., Harrison, N. J.
Atlas Welding Accessories Co., Ferndale, Mich.
Cut-O-Guide Sales Co., Cleveland, Ohio
Eagle Welding Equipment Co., Chicago, Ill.
Gaso Equipment Co., Chicago, Ill.
General Welding & Equip. Co., Boston, Mass.
Har-Worth Mfg. Co., Newark, N. J.
Heath Engrg. Co., Ft. Collins, Colo.
K-G Equip. Co., Inc., New York, N. Y.
Linde Air Products Co., A Unit of Union Carbide and Carbon Corporation, New York 17, N. Y.
Liquid Carbonic Corp., The, Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Nageldinger, John & Son, Inc., New York, N. Y.
National Welding Equip. Co., Ltd., San Francisco, Calif.
Ree Associates, Bogota, N. J.
Scientific Research Co., Portland, Ore.
Shrader, F. W., Co., Culver City, Calif.
Victor Equipment Co., San Francisco, Calif.

FLAME-CUTTING MACHINES

Acetogen Gas Co., Detroit, Mich.
Air Reduction Sales Co., New York, N. Y.
American Pullmax Co., Inc., Chicago, Ill.
Burdett Oxygen Co., Cleveland, Ohio
Cogmatic Co., Milwaukee, Wis.
Eclipse Fuel Engineering Co., Rockford, Ill.
Gaso Equipment Co., Chicago, Ill.
General Welding & Equip. Co., Boston, Mass.
H & M Pipe Beveling Machine Co., Tulsa, Okla.
Hayes Track Appliance Co., Richmond, Ind.
Heath Engineering, Fort Collins, Colo.
Idaho Sprocket & Mach. Wks., Boise, Idaho

CUT-O-MATIC®

Portable Flame Cutting Machine



WITH FLOATING TORCH ASSEMBLY

Weighs only 50 lbs. Can be taken *to the job* wherever power is available. Track-guided. All automatic. Cuts clean, sharp edges in plate or slabs. Cuts straight, circles, rings, bevels. With new floating torch assembly, cuts smooth bevels on wavy plate. Write for demonstration or catalog.

Also available, stationary multiple torch flame cutting machines.

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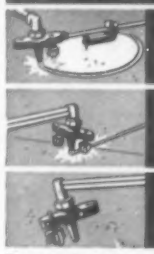
840 N. Michigan Ave., Chicago 11, Illinois

Precision flame cutting by hand



CIRCLES 1" to 24" AND LARGER ... accurate and easy plate cutting, 16 gauge to 1/2".

STRAIGHT LINES, FLAT or CONTOUR ... plate, channel, angle, beams, pipe ... within 1/64" accuracy.

BEVELS ... fast, accurate precision work with ordinary hand torch ... easy to use ... models for all torches.

Fastest, cleanest, most accurate method of using a hand cutting torch is with the

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Free Booklet. ARCAIR CO., 427 South Mt. Pleasant Ave., Lancaster, Ohio

Indiana Oxygen Co., Indianapolis, Ind.
Industrial Oxygen Co., Louisville, Ky.
Krohn Mfg & Supply Co., Centreville, Mich.
Linde Air Products Company, a unit of Union Carbide and Carbon Corp., New York 17, N. Y.
Liquid Carbonic Corp., The, Chicago, Ill.
Metro Mfg. Co., Long Island City, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Ohmstede Machine Works, Beaumont, Texas
Pandjiris Weldment Co., St. Louis, Mo.
Vernon Tool Co., Ltd., Alhambra, Calif.
Weldit, Inc., Detroit, Mich.

FLAME-CUTTING TIPS

Acetogen Gas Co., Detroit, Mich.
Adapt-All Tip Co., Los Angeles 5, Cal.
Air Products, Inc., Allentown, Pa.
Air Reduction Sales Co., New York, N. Y.
American Oxygen Service Corp., Harrison, N. J.
Burdett Oxygen Co., Cleveland, Ohio
Craftsweld Equipment Corp., Long Island City, N. Y.
Dockson Corp., Detroit, Mich.
Eclipse Fuel Engineering Co., Rockford, Ill.
General Welding & Equipment Co., Boston, Mass.
Goss Gas, Inc., Glenshaw, Pa.
Harris Calorific Co., Cleveland, Ohio
Imperial Brass Mfg. Co., The, Chicago, Ill.
K G Equipment Co., Inc., The, Allentown, Pa.
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Liquid Carbonic Corp., The, Chicago, Ill.
Marquette Mfg. Co., Minneapolis, Minn.
Milburn, Inc., Alexander, Baltimore, Md.
Miles, John R. R., Inc., Minneapolis, Minn.
Modern Engineering Co., Inc., St. Louis, Mo.
National Cylinder Gas Co., Chicago, Ill.
National Torch Tip Co., Pittsburgh, Pa.
National Welding Equipment Co., San Francisco, Calif.
Smith Welding Equipment Corp., Minneapolis, Minn.
Superior Oxy-Acetylene Mach. Co., Hamilton, Ohio
Thermacote Welding Prod. Co., Newark, N. J.
Victor Equipment Co., San Francisco, Calif.
Welders Supply & Mfg. Co., The, Cincinnati, Ohio
Weldit, Inc., Detroit, Mich.

FLAME-CUTTING TORCHES

Air Products, Inc., Allentown, Pa.
Air Reduction Sales Co., New York, N. Y.
Bastian-Blessing Co., The, Chicago, Ill.
Burdett Oxygen Co., Cleveland, Ohio
Craftsweld Equip. Corp., Long Island City, N. Y.
Dockson Corp., Detroit, Mich.
General Welding & Equip. Co., Boston, Mass.
Goss Gas, Inc., Glenshaw, Pa.
Harris Calorific Co., The, Cleveland, Ohio
K-G Equipment Co., Inc., Allentown, Pa.
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Liquid Carbonic Corp., The, Wall Chem. Div., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Milburn, Inc., Alexander, Baltimore, Md.
Miles, John R. R., Inc., Minneapolis, Minn.
Modern Engineering Co., Inc., St. Louis, Mo.
Nageldinger & Son, Inc., J., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
National Welding Equipment Co., San Francisco, Calif.
Smith Welding Equip. Corp., Minneapolis, Minn.
S-S Co., Brooklyn, N. Y.
Superior Oxy-Acetylene Machine Co., The, Hamilton, Ohio
Victor Equipment Co., San Francisco, Calif.
Weldit, Inc., Detroit, Mich.

FLAME-HARDENING EQUIPMENT

Acetogen Gas Co., Detroit, Mich.
Air Reduction Sales Co., New York, N. Y.
Amer. Oxygen Service Corp., Harrison, N. J.
Bentley Weldery, Inc., Syracuse, N. Y.
Burdett Oxygen Co., Cleveland, Ohio
Dockson Corp., Detroit, Mich.
Industrial Oxygen Co., Louisville, Ky.
Linde Air Products Company, A Unit of Union Carbide and Carbon Corporation, New York 17, N.Y.
Liquid Carbonic Corp., Industrial Gas Div., Chicago, Ill.
National Cylinder Gas Co., Chicago 11, Ill.
National Welding Equipment Co., San Francisco, Calif.
Pandjiris Weldment Co., St. Louis, Mo.
Stearns-Roger Mfg. Co., Denver, Colo.
Victor Equipment Co., San Francisco, Calif.
Weldit, Inc., Detroit, Mich.

FLAME-PRIMING HEADS

Acetogen Gas Co., Detroit, Mich.
Air Reduction Sales Co., N. Y., N. Y.
Linde Air Products Company, A Unit of Union Carbide and Carbon Corporation, New York 17, N.Y.
National Cylinder Gas Co., Chicago, Ill.
Stearns-Roger Mfg. Co., Denver, Colo.

FLAME-SPINNING HEADS

Linde Air Products Company, A Unit of Union Carbide and Carbon Corporation, New York 17, N.Y.
Stearns-Roger Mfg. Co., Denver, Colo.

FLINT, For Gas Lighters

Air Reduction Sales Co., New York, N. Y.
American Oxygen Service Corp., Harrison, N. J.
Atlas Welding Accessories Co., Ferndale, Mich.
Burdett Oxygen Co., Cleveland, Ohio
Dockson Corp., Detroit, Mich.
Flint Products Co., Brooklyn, N. Y.
Fuller, G. C., Mfg. Co., Cincinnati, Ohio
General Scientific Equip. Co., Philadelphia, Pa.
Industrial Products Co., Phila., Pa.
Linde Air Products Company, A Unit of Union Carbide and Carbon Corporation, New York 17, N.Y.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
National Cylinder Gas Co., Chicago, 11, Ill.
Ragle Industries, J. M., Kansas City, Mo.
Randall Mfg. Co., No. Kansas City, Mo.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety Gas Lighter Co., Lynn, Mass.
Smith & Sons, Inc., G. W., Dayton, Ohio
Smith Welding Equipment Corp., Minneapolis, Minn.
Weldit, Inc., Detroit, Mich.

GAS-BRAZING MACHINES

Blackhawk Mfg. Co., Milwaukee, Wis.
Eclipse Fuel Engineering Co., Rockford, Ill.
Gas Appliance Service Inc., Chicago, Ill.
Gasflux Co., The, Mansfield, Ohio
Modern Engineering Co., Inc., St. Louis, Mo.
Peck, Cecil C., Co., Cleveland, Ohio

GAS WELDING MACHINES

Air Reduction Sales Co., New York, N. Y.
American Oxygen Service Corp., Harrison, N. J.
Burdett Oxygen Co., The, Cleveland, Ohio
Eutectic Welding Alloys Corp., Flushing, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Modern Engineering Co., Inc., St. Louis, Mo.
National Cylinder Gas Co., Chicago, Ill.
National Welders Supply Co., Charlotte, N. C.
Rall Supply Co., New York, N. Y.
Sight Feed Generator Co., West Alexandria, Ohio
Superior Oxy-Acetylene Mach. Co., Hamilton, Ohio
Victor Equipment Co., San Francisco, Calif.
Weldit, Inc., Detroit, Mich.

GAS WELDING TIPS

Air Products, Inc., Allentown, Pa.
Air Reduction Sales Co., New York, N. Y.
American Oxygen Service Corp., Harrison, N. J.
Bastian-Blessing Co., The, Chicago, Ill.
Burdett Oxygen Co., Cleveland, Ohio
Craftsweld Equipment Corp., Long Island City, N. Y.
Dockson Corp., Detroit, Mich.
General Welding & Equip. Co., Boston, Mass.
Harris Calorific Co., Cleveland, Ohio
K-G Equipment Co., Inc., Allentown, Pa.
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Liquid Carbonic Corp., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.

(Continued on next page)

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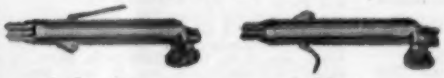

1. Over lever. *2. Trigger.* *3. Under lever as shown above.*

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(Continued from pag 15)

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Victor Equipment Co., San Francisco, Calif.
Welders Supply & Mfg. Co., The, Cincinnati, Ohio
Weldit, Inc., Detroit, Mich.

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Burdett Oxygen Co., Cleveland, Ohio
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Dockson Corp., Detroit, Mich.
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General Welding & Equipment Co., Boston, Mass.
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Miles, John R. R., Inc., Minneapolis, Minn.
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Harris Calorific Co., Cleveland, Ohio
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National Cylinder Gas Co., Chicao, Ill.
National Welding Equipment Co., San Francisco, Calif.
Sight-Feed Generator Co., West Alexandria, Ohio
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Superior Oxy-Acetylene Mach. Co., Hamilton, Ohio
Trindl Products Ltd., Chicago, Ill.
Victor Equipment Co., San Francisco, Calif.
Welders Supply & Mfg. Co., Cincinnati, Ohio
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Burdett Oxygen Co., Cleveland, Ohio
Commercial Gas Corp., Wilkes-Barre, Pa.
Craftsweld Equip. Corp., Long Island City, N. Y.
Dockson Corp., Detroit, Mich.
Independent Engineering Co., O'Fallon, Ill.
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Liquid Carbonic Corp., Chicago, Ill.
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Thompson Engineering Co., The, Grand Rapids, Mich.
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General Welding & Equip. Co., Boston, Mass.
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Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.

(Continued on next page)

OXYGEN AND ACETYLENE GAGES

(Continued from page 16)

Liquid Carbonic Corp., The, Chicago, Ill.
Manning, Maxwell & Moore, Inc., Bridgeport, Conn.
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Marsh, Jas. P., Corp., Skokie, Ill.
Milburn, Alexander, Inc., Baltimore, Md.
Modern Engineering Co., Inc., St. Louis, Mo.
Nageldinger & Son, J., Inc., New York, N. Y.
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Natl. Welding Equip. Co., San Francisco, Cal.
Oxo Welding Equip. Co., Chicago, Ill.
Smith Welding Equipment Corp., Minneapolis, Minn.
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U. S. Gauge Co., Div. American Machine and Metals, Inc., Sellersville, Pa.
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Marquette Mfg. Co., Inc., Minneapolis, Minn.
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American Oxygen Service Corp., Harrison, N. J.
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Sight Feed Generator Co., The, West Alexandria, Ohio
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Burdett Oxygen Co., Cleveland, Ohio
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Harris Calorific Co., Cleveland, Ohio
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Goss Gas, Inc., Glenshaw, Pa.
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Holden, A. F. Co., The, New Haven, Conn.
Insto-Gas Corp., Detroit, Mich.
K-G Equipment Co., Inc., Allentown, Pa.
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Liquid Carbonic Corp., Chicago, Ill.
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(Continued from page 17)

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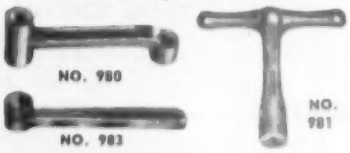

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Marquette Mfg. Co., Inc., Minneapolis, Minn.
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Liquid Carbonic Corp., The, Chicago, Ill.
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Miles, John R. R., Inc., Minneapolis, Minn.
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National Welding Equipment Co., San Francisco, Calif.
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Goss Gas, Inc., Glenshaw, Pa.
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Imperial Brass Mfg. Co., Chicago, Ill.
K-G Equipment Co., Inc., Allentown, Pa.
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Liquid Carbonic Corp., Wall Chemical Div., Chicago, Ill.
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Marquette Mfg. Co., Inc., Minneapolis, Minn.
Milburn, Alexander, Inc., Baltimore, Md.
Miles, John R. R., Inc., Minneapolis, Minn.
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National Cylinder Gas Co., Chicago, Ill.
National Torch Tip Co., Pittsburgh, Pa.
National Welding Equipment Co., San Francisco, Calif.
Purity Cylinder Gases Inc., Grand Rapids, Mich.
Smith Welding Equip. Corp., Minneapolis, Minn.
Superior Oxy-Acetylene Mach. Co., Hamilton, Ohio
Victor Equipment Co., San Francisco, Calif.
Welders Supply & Mfg. Co., The, Cincinnati, Ohio
Weldit, Inc., Detroit, Mich.

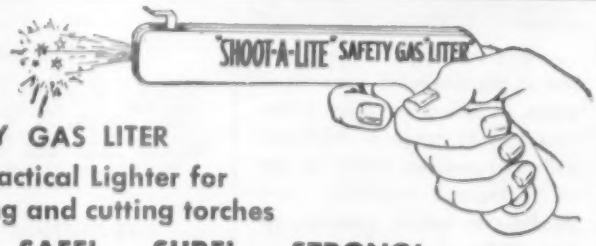
TIP CLEANERS, Oxyacetylene

Air Reduction Sales Co., New York, N. Y.
American Oxygen Service Corp., Harrison, N. J.
Atlas Welding Accessories Co., Ferndale, Mich.
Craftsweld Equip. Corp., Long Island City, N. Y.
Dockson Corp., Detroit, Mich.
Harris Calorific Co., Cleveland, Ohio
Kelite Products, Inc., Los Angeles, Calif.
Klem Chemicals, Inc., Dearborn, Mich.
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y
Liquid Carbonic Corp., Chicago, Ill.
Maitlen & Benson, Inc., Long Beach, Calif.
Mallory, P. R. & Co., Inc. Indianapolis, Ind.
Marquette Mfg. Co., Minneapolis, Minn.
Milburn, Alexander, Inc., Baltimore, Md.
Modern Engineering Co., Inc., St. Louis, Mo.
National Cylinder Gas Co., Chicago 11, Ill.
National Welding Equipment Co., San Francisco, Calif.
New Mexico Steel Co., Albuquerque, New Mexico
Oakite Products, Inc., New York, N. Y.
Ragle, J. M. Industries, Kansas City, Mo.
Randall Mfg. Co., North Kansas City, Mo.
Thermacote Co., Los Angeles, Calif.
Smith Welding Equip. Corp., Minneapolis, Minn.
Welding Equipment Service Co., El Paso, Texas
Weldit, Inc., Detroit, Mich.
Wolfe-Kote Co., Inc., Sheboygan, Wis.

TORCH LIGHTERS

Air Reduction Sales Co., New York, N.Y.
Allied Weld-Craft, Inc., Indianapolis, Ind.
American Oxygen Service Corp., Harrison, N. J.
Atlas Welding Accessories Co., Ferndale, Mich.
Burdett Oxygen Co., Cleveland, Ohio
Dockson Corp., Detroit, Mich.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Flint Products Co., The, Brooklyn, N. Y.
Fuller, G. C., Mfg. Co., Cincinnati, Ohio
General Scientific Equip. Co., Philadelphia, Pa.
Harris Calorific Co., Cleveland, Ohio
Holden, A. F., Co., The, New Haven, Conn.
K-G Equipment Co., Inc., Allentown, Pa.
Linde Air Products Company, a unit of Union Carbide and Carbon Corp., New York 17, N. Y.
Liquid Carbonic Corp., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Matchless Utilities Co., New York, N. Y.
Metal Bond Mfg. Co., St. Louis, Mo.
Milburn, Alexander, Inc., Baltimore, Md.
Modern Engineering Co., Inc., St. Louis, Mo.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago 11, Ill.
National Welding Equip. Co., San Francisco, Calif.
Parker Safety Equip. Co., Irvington, N. J.
Ragle, J. M., Industries, Kansas City, Mo.
Randall Mfg. Co., North Kansas City, Mo.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety Gas Lighter Co., Lynn, Mass.
Shoot-A-Lite Corp., New York, N. Y.
Smith Welding Equipment Corp., Minneapolis, Minn.
Superior Oxy-Acetylene Mach. Co., Hamilton, Ohio
Thermacote Co., Los Angeles, Calif.
Victor Equipment Co., San Francisco, Calif.
Weldit Inc., Detroit, Mich.

SHOOT-A-LITE



SAFETY GAS LITER
The Practical Lighter for welding and cutting torches
SAFE! SURE! STRONG!
Ask your jobber or write us.
SHOOT-A-LITE CORPORATION
110 WASHINGTON ST. DEPT. WE NEW YORK 6, N. Y.

TORCHES

(See various type torches, e.g., brazing, soldering, etc., torches)

TORCH NOZZLES

(See: "Flame-Cutting Tips" and "Gas Welding Tips")

VALVES, Cylinder, Operating

American Gas & Chemical Corp., Harrison, N. J.
American Oxygen Service Corp., Harrison, N. J.
Bastian- Blessing Co., The, Chicago, Ill.
Burdett Oxygen Co., Cleveland, Ohio
Kerotest Mfg. Co., Pittsburgh, Pa.
Modern Engineering Co., Inc., St. Louis, Mo.
Nageldinger & Son, Inc., J., New York, N. Y.
National Welding Equipment Co., San Francisco, Calif.
Superior Valve & Fitting Co., Pittsburgh, Pa.

VALVES, Oxygen-Cushioned

American Oxygen Service Corp., Harrison, N. J.
Chek-Shock Mfg. Co., Fowler, Calif.
Industrial Air Prod. Co., Portland, Oreg.
National Welding Equipment Co., San Francisco, Calif.

WELDING and CUTTING APPARATUS, Oxygen-Acetylene

Air Reduction Sales Co., New York, N. Y.
American Gas & Chemical Corp., Harrison, N. J.
American Oxygen Service Corp., Harrison, N. J.
Bastian-Blessing Co., The, Chicago, Ill.
Buckeye Oxygen Co., Canton, Ohio
Burdett Oxygen Co., Cleveland, Ohio
Commercial Gas Corp., Wilkes-Barre, Pa.
Craftsweld Equip. Corp., Long Island City, N. Y.
Dockson Corp., Detroit, Mich.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Gellid Engineering, Oak Park, Ill.
General Welding & Equip. Co., Boston, Mass.
Goss Gas, Inc., Glenshaw, Pa.
Harris Calorific Co., The, Cleveland, Ohio
K-G Equip. Co., Inc., Allentown, Pa.
Linde Air Products Co., Unit of Union Carbide & Chem. Corp., New York, N. Y.
Liquid Carbonic Corp., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Metal & Thermit Corp., New York, N.Y.
Milburn, Inc., Alexander, Baltimore, Md.
Miles, John R. R., Inc., Minneapolis, Minn.
Modern Engineering Co., Inc., St. Louis, Mo.
National Cylinder Gas Co., Ltd., San Francisco, Calif.
National Torch Tip Co., Pittsburgh, Pa.
National Welding Eqpt. Co., San Francisco, Calif.
Oxo Welding Equip. Co., Chicago, Ill.
Sight Feed Generator Co., The, West Alexandria, Ohio
Smith Welding Equipment Corp., Minneapolis, Minn.
Superior Oxy-Acetylene Machine Co., The, Hamilton, Ohio
Victor Equipment Co., San Francisco, Calif.
Weldit, Inc., Detroit, Mich.

WELDING HOSE FITTINGS

Air Reduction Sales Co., N. Y., N. Y.
American Oxygen Service Corp., Harrison, N. J.
Bastian-Blessing Co., The, Chicago, Ill.
Burdett Oxygen Co., Cleveland, Ohio
Cooper Alloy Foundry Co., The, Hillside, N. J.
Craftsweld Equipment Corp., Long Island City, N. Y.
Dockson Corp., Detroit, Mich.
Fauver, J. N., Co., Inc., Detroit, Mich.
Goss Gas, Inc., Glenshaw, Pa.
K-G Equipment Co., Inc., Allentown, Pa.
Linde Air Products Co., A Unit of Union Carbide and Carbon Corporation, New York 17, N. Y.
Liquid Carbonic Corp., The, Industrial Gas Div., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Metro Mfg. Co., Long Island City, N. Y.
Milburn, Alexander, Inc., Baltimore, Md.
Modern Eng. Co., Inc., St. Louis, Mo.
Nageldinger & Son, Inc., J., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
National Welding Equip. Co., San Francisco, Calif.
Punch-Lok Co., Chicago, Ill.
Ragle, J. M. Industries, Kansas City, Mo.
Sight Feed Generator Co., West Alexandria, Ohio
Smith Welding Equipment Corp., Minneapolis, Minn.
Uniflex Cable Co., Detroit, Mich.
Weldit, Inc., Detroit, Mich.

WELDING TORCHES, Gas

(See: "Gas Welding Torches")

Dockson
WELDING OUTFITS
Built for Better Service
Made right—Priced right—
Proved right.
DOCKSON CORPORATION
3837 Wabash Detroit 8, Mich.

ARC EQUIPMENT

ALL types of welding power sources will be found in this category. The grouping also covers accessories used in the arc process. In 1954, sales of arc-welding machines totaled over $33,000,000.

Included here also are manual-arc-welding accessories, such as electrode holders, and miscellaneous items which contribute to better arc welding.

So far, NWSA has set up only seven sub-headings under this classification. They are:

310 Electric drive welders
320 Gas engine drive welders
330 Transformer welders
340 Rectifier welders
350 Special welders
380 Miscellaneous
390 Accessories

Arc equipment is arranged alphabetically in this Fact File listing. Look for it by its common name.

AC ARC WELDERS

Air Reduction Sales Co., New York, N. Y.
Allen Electric & Equip. Co., Kalamazoo, Mich.
Birdsell Mfg. Co., Mountain View, Calif.
Electric Arc Inc., Newark, N. J.
Forney Mfg. Co., Fort Collins, Colo.
General Electric Co., York, Pa.
Glenn Co., Oakland, Calif.
Harnischfeger Corp., Milwaukee, Wis.
Hobart Bros. Co., Troy, Ohio
Larkin Welder & Machine Corp., Brooklyn, N. Y.
Lee, K. O., Co., Aberdeen, S. D.
Lincoln Electric Co., The, Cleveland, Ohio
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Metal & Thermit Corp., New York, N. Y.
Mid-States Welder Mfg. Co., Chicago, Ill.
Miller Elec. Mfg. Co., Inc., Appleton, Wis.
National Cylinder Gas Co., Chicago 11, Ill.
Shober Sales, Inc., Stockton, Calif.
Smith Corp., A. O., Milwaukee, Wis.
Smith Welding Equipment Corp., Minneapolis, Minn
Trindl Products, Ltd., Chicago, Ill.
Twentieth Century Mfg. Co., Minneapolis, Minn.
Westinghouse Elec. Corp., Pittsburgh, Pa.

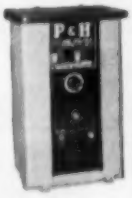
AC-DC WELDERS

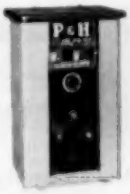
Harnischfeger Corp., Milwaukee, Wis.
Lincoln Electric Co., Cleveland, Ohio
Miller Electric Mfg. Co., Appleton, Wis.

New
P&H
welding
cost-cutters

P&H AC/DC WELDERS
200- and 300-AMP. MODELS
The only welder that gives you either AC or DC current at the flip of a switch. Operates on 230/460-volt, 50/60-cycle current—single phase.

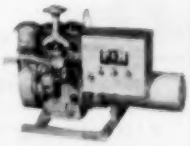
P&H DA-200HFGW and DA-300HFGW
200- and 300-AMP. HIGH FREQUENCY GAS and WATER AC/DC WELDERS
Seven welders in one. AC or DC current at a flip of a switch. Use it for metallic arc, Automatic Heliarc*, Sigma Welding or Spot Welding. Gives you a well-equipped welding shop with one machine.
*T.M. Linde Air Products Co.





P&H TI-295
LOW-COST
295-AMP. AC WELDER
Top amperage, 295 — open-circuit voltage, 75. The only low-cost, intermittent welder that lets you weld with low-hydrogen and stainless-steel electrodes.

P&H WN-250
ENGINE-DRIVEN ARC WELDER
NEMA-rated at 200 amps — but pulls 300 amps. Has full 20-gallon gas tank. Welding range 30-200 amps., also available with 2-wheel mountings.



P&H WN-180
ENGINE-DRIVEN ARC WELDER
A truly portable weld shop. Weighs only 425 lbs. Air-cooled. Output range, 20 to 220 amps. Also available with 2-wheel mounting.
2606

Ask your P&H representative for complete information, or write for free catalogs giving full details.

P&H WELDING DIVISION
HARNISCHFEGER CORPORATION
4513 West National Ave., Milwaukee 46, Wisconsin

Difficulties in Metal-Arc Welding

Difficulty	Possible Causes	Possible Corrections
Incomplete Penetration	1. Joint design faulty 2. Welding speed too rapid 3. Insufficient welding current 4. Too large an electrode size	1. Check root opening, root face dimension, included angle 2. Slow down welding speed 3. Increase welding current 4. Decrease electrode size
Poor Appearance	1. Current either too high or too low 2. Improper use of electrode 3. Faulty electrode	1. Adjust current values 2. Check welding procedure 3. Dry electrode to remove moisture; change electrode
Undercutting	1. Current too high 2. Arc length too long 3. Improper manipulation of the electrode 4. Welding speed too rapid	1. Use lower current 2. Shorten arc length 3. Change angle of holding electrode so that arc force will be used to fill undercut 4. Slow down the welding speed
Excessive Spatter	1. Current too high 2. Arc length too long 3. Excessive arc blow 4. Faulty electrode	1. Use lower current 2. Shorten the arc length 3. See remedies for "arc blow" 4. Replace electrode
Arc Blow	1. Magnetic field, created when using d-c, causes the arc to wander	1. Use a-c machine 2. Counteract blow with angle of electrode 3. Rearrange or split ground clamp 4. Replace magnetic work bench 5. Use brass or copper back-up bar
Pinholes	1. Foreign matter in joint	1. Remove rust, scale and other foreign matter from edges
Slag in Weld	1. Joint design: sharp V-shaped recess 2. High viscosity of molten metal, rapid chilling, too low a weld temperature	1. Proper preparation of groove before each bead is deposited. Avoid contours that are difficult to penetrate with arc 2. Use preheat and obtain higher heat input per unit
Porous Welds	1. Welding speed too rapid 2. Current too low 3. High sulphur or other impurities 4. Faulty electrodes	1. Slow down welding speed 2. Increase current values 3. Use low-hydrogen electrodes 4. Dry electrodes to remove moisture; replace electrodes
Cracked Welds	1. Faulty electrode 2. Rigidity of joint, stressed weld 3. Shape of bead 4. Craters 5. Fast cooling rate	1. Use low-hydrogen electrodes 2. Redesign joint; use preheat and postheat; weave 3. Use slower travel or faster freezing electrode to give a more convex bead 4. Back step to fill craters 5. Preheat and/or postheat
Distortion and Warping	1. Improper design of weld 2. Overheating 3. Welding speed too slow 4. Improper welding sequence 5. Faulty clamping	1. Redesign to allow for expansion and contraction forces 2. Use lower current and more efficient chill bars 3. Increase the speed of the arc 4. Improve welding sequence 5. Clamp properly to chill bar
Brittle Welds	1. Incorrect electrode 2. Incorrect heat treatment 3. Air-hardening deposit 4. Base metal pick-up	1. Use low-hydrogen or austenitic electrode 2. Use proper preheat and postheat cycles 3. Use austenitic electrodes 4. Shallow penetration by directing arc on weld puddle

AIR FILTER

(See: "Welder Filters")

ARC-AIR CUTTING & GOUGING APPARATUS

(See "Gougers")

ARC-OXYGEN CUTTING APPARATUS

Arcos Corp., Philadelphia, Pa.
Craftsweld Equipment Corp., Long Island City, N. Y.
Eutectic Welding Alloys Corp., Flushing, N. Y.

ARC STABILIZERS

Mid-States Welder Mfg. Co., Chicago, Ill.
Miller Electric Mfg. Co., Appleton, Wis.

NCG®
Sureweld®
WELDERS

EVERY TYPE FOR EVERY NEED

SUREWELD A-C WELDERS

Have exclusive features not found in other machines. Rugged, dependable, unmatched in performance and value. Five shop models. Nine industrial models.

SUREWELD INERT-ARC WELDERS

Improved high frequency unit produces extremely stable arc, results in easier, faster better welding. Bulletin NH-155 describes its 20 outstanding features.

D-C RECTIFIER ARC WELDERS

Easier welding, lower power costs, lower maintenance. Unique transformer-reactor-rectifier unit stabilizes arc, minimizes arc blow. No brushes, bearings, commutators to wear or cause trouble. Five models.

See separate advertisement on Sureweld Portable D-C Welder.

Branches and dealers from coast-to-coast

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NCG NATIONAL CYLINDER GAS COMPANY
840 N. Michigan Ave., Chicago 11, Illinois

Special Chemicals Corp., Ossining, N. Y.
Titanium Alloy Mfg. Co., Niagara Falls, N. Y.
Welding Apparatus Co., Chicago, Ill.
Westinghouse Electric Corp., Pittsburgh, Pa.

ARC WELDERS, A-C

(See: "A-C Arc Welders")

ARC WELDERS, Automatic

(See: "Automatic Arc Welders")

ARC WELDERS, D-C

(See: "D-C Arc Welders")

ARC WELDING VOLTAGE REGULATORS

(See: "Voltage Regulators, Arc")

ATOMIC-HYDROGEN TORCHES

Acme Welding Supply Co., Houston, Texas
American Oxygen Service Corp., Harrison, N. J.
Electric Arc, Inc., Newark, N. J.
General Electric Co., Schenectady, N. Y.
Insto-Gas Corp., Detroit, Mich.

ATOMIC-HYDROGEN WELDERS

Electric Arc, Inc., Newark, N. J.
General Electric Co., Schenectady, N. Y.

BRUSHES (Motor, Generator)

Becker Bros. Carbon Co., Cicero, Ill.
General Electric Co., Schenectady, N. Y.
Joseph Dixon Crucible Co., Jersey City, N. J.
Hobart Bros. Co., Troy, Ohio
Keystone Carbon Co., Inc., St. Marys, Pa.
Lincoln Electric Co., The, Cleveland, Ohio
National Carbon Div., Union Carbide and Carbon Corp., New York, N. Y.
Ohio Carbon Co., Cleveland, Ohio
Pure Carbon Co., Inc., St. Marys, Pa.
Speer Carbon Co., St. Marys, Pa.
Stackpole Carbon Co., St. Marys, Pa.
Superior Carbon Products, Inc., Cleveland, Ohio

JACKSON
CABLE CONNECTORS

Quality products, part of a group including Ground Clamps, Cable Connectors, Splicers and Lugs, all available in sizes No. 1, 2/0, and 4/0. Made by the makers of the popular quality line of Arc Welding Electrode Holders.

JACKSON PRODUCTS
WARREN, MICHIGAN

CABLE CONNECTORS

Albert & J. M. Anderson Mfg. Co., S. Boston, Mass.
Anthony, F. M. Co., Piedmont, Calif.
Ben-Nek Holder, Inc., Branford, Conn.
Burdett Oxygen Co., Cleveland, Ohio
Cam-Lok, Div. of Empire Prod. Co., Cincinnati 36, Ohio
Chicago Tool & Engineering Co., Chicago, Ill.
Craftsweld Equipment Corp., Long Island City, N. Y.
Detroit Electrode Holder Mfg. Co., Detroit, Mich.

"CABLE CONNECTORS"
(Listing continued on next page)

BECKER
CARBON
WELDER BRUSHES

for all types and makes of welding equipment

Everything you need from *one* source, with *one* responsibility. The fast, economical way to order. Catalog gives complete specifications, factory numbers, scaled drawings, etc. Write for your free copy today.

WHOLESALERS:
Some Distributorships still open.
Write for information.

BECKER BROTHERS CARBON CO.
3450 SO. LARAMIE AVE • CICERO 50, ILLINOIS

HI-AMP
CABLE CONNECTORS

Keep your Connections tight by using these connectors with the new locking feature. One quarter turn expands the inner male plug end against the walls of the female socket. Loose connections cause waste of current needed at the end of the electrode.

Sold only through Welding Supply Distributors.

WAGNER Mfg. Co., Jackson, Mo.

CABLE CONNECTORS

(Continued from page 21)

Erico Products, Inc., Cleveland, Ohio
Fibre-Metal Products Co., Chester, Pa.
General Electric Co., Schenectady, N. Y.
Har-Worth Mfg. Co., Newark, N. J.
Hobart Bros. Co., The, Troy, Ohio
Jackson Products, Warren, Mich.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Tweco Prod. Co., Wichita, Kan.
Wagner Mfg. Co., Inc., Jackson, Mo.

TWECO CONNECTORS

SOL-CON (SOLDER TYPE)
MEC-CON (MECHANICAL TYPE)

Positive and efficient cable connection with quick detach and jump-in advantages.

Two sizes: No. 1 for cable sizes 4, 2 or 1. No. 2 for cable sizes 1/0 through 4/0.

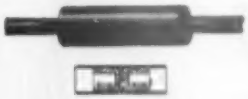
TWECO PRODUCTS

Write for new No. 10 TWECOLOG with complete TWECO Line of Cable Accessories.

Tweco Products Co.
1452 S. Mosley Wichita 1, Kansas

CABLES, Inspection Equipment

(See: "Inspection Equipment, Cables")



JACKSON
CABLE SPLICERS

Quality products, part of a group including Ground Clamps, Cable Connectors, Splicers and Lugs, all available in sizes No. 1, 2/0, and 4/0. Made by the makers of the popular quality line of Arc Welding Electrode Holders.

JACKSON PRODUCTS
WARREN, MICHIGAN

CABLE SPLICERS

Air Reduction Sales Co., New York, N. Y.
Anthony, F. M., Co., Piedmont, Calif.
Industrial Air Prod. Co., Portland, Ore.
Jackson Products, Warren, Mich.
Liquid Carbonic Corp., Chicago, Ill.
Mine Safety Appliances Co., Pittsburgh, Pa.
Mueller Electric Co., Cleveland, Ohio
National Cylinder Gas Co., Chicago, Ill.
Stevens, C. H., & Co., Inc., Cornwall Bridge, Conn.
Tweco Products Co., Wichita, Kan.
Wagner Manufacturing Co., Inc., Jackson, Mo.
Westinghouse Electric Corp., Pittsburgh, Pa.

CAPACITORS, Power Factor Correction

Aerovox Corp., New Bedford, Mass.
Cornell-Dubilier Elec. Co., S. Plainfield, N. J.
Deutschman Corp., Canton, Mass.

CARBON-ARC TORCHES

Allen Electric and Equip. Co., Kalamazoo, Mich.
American Oxygen Service Corp., Harrison, N. J.
Borm Mfg. Co., Elgin, Ill.
Chicago Tool & Engineering Co., Chicago, Ill.
Craftsweld Equipment Corp., Long Island City, N. Y.
Electric Arc, Inc., Newark, N. J.
Ergolyte Mfg. Co., Philadelphia, Pa.
Fibre-Metal Products Corp., Skokie, Ill.
Hammet Elec. Mfg. Co., Kansas City, Mo.
Lee, K. O., Co., Aberdeen, S. D.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Mid-States Welder Mfg. Co., Chicago, Ill.
Miller Electric Mfg. Co., Appleton, Wis.
Patent Specialties, Inc., Miami, Fla.
Philips, C. E., & Co., Detroit, Mich.
Trindl Products, Ltd., Chicago, Ill.
Twentieth Century Mfg. Co., Minneapolis, Minn.
Westinghouse Electric Corp., Pittsburgh, Pa.

CARBON ELECTRODE HOLDERS

Air Reduction Sales Co., New York, N. Y.
Albert & J. M. Anderson Mfg. Co., Boston, Mass.
Arcair Co., Bremerton, Wash.
Fibre-Metal Prod. Co., The, Chester, Pa.
Hobart Bros. Co., The, Troy, Ohio
Industrial Products Co., Philadelphia, Pa.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Metal & Thermit Corp., N. Y. 17, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Precision Welder Mfg. Co., Chicago, Ill.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Tweco Products Co., Wichita, Kans.
Westinghouse Elec. Corp., Pittsburgh, Pa.

CARBON ELECTRODE HOLDERS

Four lightweight, air cooled models for D. C. carbon arc welding. 150, 200, 300 and 500 ampere capacity.

CARBON RANGE 1/8" to 3/4"

TWECO PRODUCTS

Write for new No. 10 TWECOLOG Bulletin which pictures and describes complete TWECO Line of Arc Welding Cable Connections and Accessories.

Tweco Products Co.
1452 So. Mosley Wichita 1, Kans.

COMMUTATOR MAINTENANCE EQUIPMENT

Holub Industries, Inc., Sycamore, Ill.
Ideal Industries, Inc., Sycamore, Ill.
Ohio Carbon Co., The, Cleveland, Ohio

CONSTANT-POTENTIAL WELDERS

General Electric Co., York, Pa.
Glenn Co., Oakland, Calif.
Hobart Bros. Co., Troy, Ohio
Smith, A. O., Corp., Milwaukee, Wis.
Westinghouse Electric Corp., Pittsburgh, Pa.

CONVERSION UNITS, A-C, Arc

Automatic Temperature Control Co. Inc., Philadelphia, Pa.
Ergolyte Mfg. Co., Philadelphia, Pa.
Greyhound A. C. Arc Welder Corp., Brooklyn, N. Y.
Hoffman, R. W. Co., Inc., Chicago, Ill.
Mid-States Welder Mfg. Co., Chicago, Ill.
Miller Electric Mfg. Co., Appleton, Wis.
Welding Apparatus Company, Chicago, Ill.
Westinghouse Elec. Corp., Pittsburgh, Pa.

CRATER ELIMINATORS, Arc

Mullenbach Div., Electric Machinery Mfg. Co., Los Angeles, Calif.
Ragle Industries, J. M., Kansas City, Mo.
Strobel Corp., Carl, Los Angeles, Calif.
Westinghouse Elec. Corp., Pittsburgh, Pa.

CRIMPING TOOLS

Aircraft-Marine Products, Inc., Harrisburg, Pa.
Anthony, F. M., Co., Piedmont, Calif.
Burndy Engineering Co., Inc., New York, N. Y.
Niagara Machine & Tool Works, Buffalo, N. Y.
Pyramid Steel Co., Cleveland, Ohio
Ragle, J. M., Industries, Kansas City, Mo.
Tweco Products Co., Wichita, Ka.
Wagner Mfg. Co., Jackson, Mo.

CURRENT REGULATORS, Arc

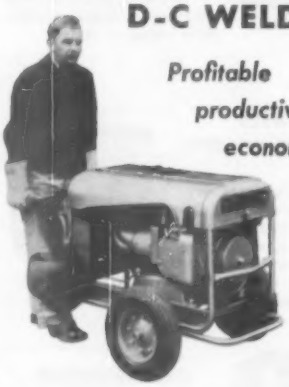
Cutler-Hammer, Inc., Milwaukee, Wis.
Mullenbach Div., Electric Machinery Mfg. Co., Los Angeles, Calif.
Westinghouse Electric Corp., Pittsburgh, Pa.

D-C ARC WELDERS, M-G and Engine-drive

Air Reduction Sales Co., New York, N. Y.
American ELIN Corp., New York, N. Y.
Birdsall Mfg. Co., Inc., Los Altos, Calif.
Electric Arc, Inc., Newark, N. J.
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Hobart Bros. Co., Troy, Ohio
Lincoln Electric Co., The, Cleveland, Ohio

(Continued on next page)

SUREWELD® PORTABLE D-C WELDER



Profitable
productive
economical

Lightweight, compact, gas driven welder with air cooled engine. Goes wherever operator can go. Has capacity for 85-90% of all on-the-job welding. Ideal for maintenance welding. Usually pays for itself quickly with savings. Write for literature or demonstration.

Branches and dealers from coast to coast

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D-C ARC WELDERS

(Continued from page 22)

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Jackson Products Co., Warren, Mich.
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MORE ELECTRODE HOLDERS on Page 24

H. J. WAGNER'S WELDING TWINS

Latest and Finest Creations in the Field

MODEL J

H. J. WAGNER'S NEW PATENTED HOLDER

Available in 250, 300, 400 and 500 Amperes

NEW flush joining of upper and lower tongs. No pivot pin.
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Developed to reduce Electrode Stub Waste by depositing the total Fluxed Length of the Electrode. Two sizes, 400 Amp. and 600 Amp.

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(Continued from page 23)

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for every welding service
Rugged Construction
Light in Weight
Self Ventilated
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Write for free Bulletin 467
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Lincoln Electric Co., Cleveland, Ohio
Mueller Elec. Co., Cleveland, Ohio
Tweco Prod. Co., Wichita, Kans.
Universal Welder Corp., Cleveland, Ohio
Victor Equipment Co., San Francisco, Calif.
Wagner, H. J., Products, Inc., Jackson, Mo.
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Will take rough treatment—no replacements necessary. Broad, flat base provides maximum contact surface—and tapered to slide under flat plates—can be used on jobs inaccessible to use of regular clamps.

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The standard ground clamp—everywhere!
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SMALLER, SOLID COPPER CLAMPS
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TRADE NAMES* OF ELECTRODES AND COMPARABLE AWS-ASTM DESIGNATIONS

Designation	E-4510	E-6010	E-6011	E-6012	E-6013	E-6015	E-6016	E-6020	E-6030	E-7010	E-7016	E-7020
Weld positions	V, F, OH, H	F, V, OH, H	F, V, OH, H	F, V, OH, H	F, V, OH, H	F, V, OH, H	F, V, OH, H	H-Fillet, F	Flat	V, F, OH, H	F, V, OH, H	H-Fillet, F
General Description / MANUFACTURER	Wire—coating applied before drawing	Heavy coated D-C pos.	Heavy coated A-C or D-C	Heavy coated D-C neg. or A-C	Heavy coated A-C	Low-hydrogen D-C neg. or A-C	Low-hydrogen D-C pos. or A-C	H. coated A-C or neg. for fillets, A-C or pos. for flat	Heavy coated D-C pos. or A-C	Heavy coated D-C pos. only	Low-hydrogen D-C pos. or A-C	H. coated A-C or neg. for fillets, A-C or pos. for flat
Air Reduction[1]	41 or 63	78E or 78	220	87 or 387	90 or 90A		312	81 or 315		93		94
Alloy Rods[2]		6010	6011	6012	6013			6020		7010	7016	7020
American Agile ...		White	Blue	Red-White	Blue-Red	FMS		Blue-Grey				
Champion	Sulcoat	Blue Devil	Bluedac	Gray Devil Gray Devil 2 Gray Devil H.P.	Graydac			Black Devil	Red Devil	Blue Devil 85	Hy-Lo	Black Devil 75
General Electric...	F	W-22	W-26	W-20F W-20 W-28 W-29	W-25		W-32	W-24 or W-27		W-52	W-32	W-54
Harnischfeger	Dustcote	AP or APV	AC-1	PF or PFA	SM or AC-3	70LA	70LA-2	DH-2		CM-50		CM-50-2
Hobart	Sulcoat	55 or 10	335	77 or 12	447 or 13	70PL	16	111		885		111-HT
Hollup	Hollup 305	Sureweld B or BP	Sureweld CB	Sureweld N, G or NM	Sureweld CN or UE			Sureweld FD	Sureweld A	Sureweld MLY-50	7016	Sureweld MLY-A
Lincoln	Stable-Arc	Fleetweld 5 or 5V Lightweld	Fleetweld 35	Fleetweld 7	Fleetweld 37 or 47 Planeweld 2		LH-70	Fleetweld 11		Shieldarc 85		Fleetweld 11HT
Marquette		No. 105	No. 130 or 140	No. 120	No. 151			No. 115				
McKay	21	15 or 15D	11	17 or 116	24	Puralloy 70		20	18	715		720
Metal and Thermit[3]	Sulcoat	Type R	Type A	Genex or Genex M	Type U or Alternex		Type HTS	Type FHP or Type D		Molex		Type DM
Page	B Rust Lime				Hi-Tensile G	Hi-Tensile M						
Reid-Avery[4]	D or Blue Label	7	11	8	13	Ferritic	16	20	5	74		64
Shober Sales		32	33	34	35	LH-37		66				
A. O. Smith.....		SW 10	SW 14	SW 11 or 17	SW 15 or 16		SW64	SW 35	SW 20	SW 75		SW 76 or 78
Westinghouse	18 Sulcoat	AP	ACP	FD or FD-2	SW or SW-2	LoH		DH	DH	AP-MO		DH-MO
Wilson	17 or 18	98 or 98N	530	107 or 109	520 or 520A		512	105 or 106		Alloy Rod A		Alloy Rod B

*Trade name or Type No. is usually prefixed by company name.
V = vertical, F = flat, OH = overhead, H = horizontal, H-Fillet = horizontal fillet. [1]Airco prefix. [2]Weld-Arc. [3]Murex. [4]Raco prefix.

Arc-Welding Cable Data

Table I—Arc-Welding Electrode and Ground Cables

National Rating of Welder in Amperes	Recommended Cond Size AWG*	Number of Strands	Stranding	Diameter of Conductor Inches	Over-all Diameter Inches	Resistance Ohms/1000 ft. †	Impedance Ohms/1000 ft. ‡
100	4	1,050	7/3/50/.0063	.30	.510	.318	.321
150	2	1,680	7/3/80/.0063	.38	.575	.196	.200
200	2	1,680	7/3/80/.0063	.38	.575	.196	.200
300	0	2,695	7/7/55/.0063	.46	.700	.124	.129
400	00	3,381	7/7/69/.0063	.48	.775	.095	.104
500	00	3,381	7/7/69/.0063	.48	.775	.095	.104
600	000	4,284	7/7/87/.0063	.57	.845	.078	.086

Table II—Portable Cable between Arc Welder and Power Source

A-c Arc Welders (Transformer Type with Single-Phase Primary)							Motor Driven D-c Welders									
							With A-c Motor Drive					With D-c Motor Drive				
Use Three-Conductor Cable With the Third Conductor as a Ground Wire							For 3-Phase Motors Use 4-Conductor Cable With the Fourth Conductor as a Ground Wire					Use 3-Conductor Cable with the Third Conductor as a Ground Wire				
Nom Rating of Welder in Amp	Rated Primary Load Amp	Primary Volts	Recom Cond Size*	Number of Strands	Diam of Bare Cond	Over-all Diam	Motor Rating Volts	Recom Cond Size*	Number of Strands	Diam of Bare Cond	Over-all Diam	Motor Rating Volts	Recom Cond Size*	Number of Strands	Diam of Bare Cond	Over-all Diam
100	62	110	4	49	.260	1.17	...	...	...	...	...	...	...	...	...	...
	31	220	8	49	.160	.93	...	...	...	...	...	...	...	...	...	...
	16	440	12	49	.100	.61	...	...	...	...	...	...	...	...	...	...
150	...	...	...	...	...	...	220	10	49	.130	.72	115	2	133	.340	1.34
	...	...	...	...	...	...	440	14	41	.080	.60	230	6	49	.230	1.02
200	72	220	2	133	.340	1.34	220	8	49	.160	.97	115	0	133	.430	1.73
	36	440	8	49	.160	.93	440	12	49	.100	.66	230	4	49	.260	1.17
	...	...	...	...	...	...	550	14	41	.080	.60	550	10	49	.130	.66
§200	50	220	6	49	.205	1.02	...	...	...	...	...	...	...	...	...	...
	25	440	10	49	.130	.66	...	...	...	...	...	...	...	...	...	...
	20	550	12	49	.100	.61	...	...	...	...	...	...	...	...	...	...
300	77	220	2	133	.340	1.34	220	6	49	.205	1.07	115	000	259	.530	1.98
	39	440	8	49	.160	.93	440	10	49	.130	.72	230	2	133	.340	1.34
	31	550	8	49	.160	.93	550	10	49	.130	.72	550	8	49	.160	.93
400	...	...	...	...	...	...	220	4	49	.260	1.23	...	...	...	...	...
	...	...	...	...	...	...	440	8	49	.160	.97	230	1	133	.380	1.59
	...	...	...	...	...	...	550	10	49	.130	.72	550	6	49	.230	1.02
500	125	220	0	133	.430	1.73	...	...	...	...	...	...	...	...	...	...
	63	440	4	49	.260	1.17	...	...	...	...	...	...	...	...	...	...
	50	550	6	49	.205	1.02	...	...	...	...	...	...	...	...	...	...
600	...	...	...	...	...	...	220	2	133	.340	1.46	...	...	...	...	...
	...	...	...	...	...	...	440	6	49	.205	1.07	230	000	259	.530	1.98
	...	...	...	...	...	...	550	8	49	.160	.97	550	4	49	.260	1.19

*Recommendation of National Electric Code.
†At 60 C Copper Temperature.
‡Based on the assumption that the two leads (electrode and work cable) are taped together.
§(With capac).

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(See: "Conversion Units, A-C Arc")

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Zucker, Myron Eng. Co., Detroit, Mich.

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Westinghouse Elec. Corp., Pittsburgh, Pa.
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(See various welder classifications)

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Vickers Electric Div., St. Louis, Mo.
Westinghouse Electric Corp., Pittsburgh, Pa.

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Cutler-Hammer, Inc., Milwaukee, Wis.
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Guyan Machine Co., Logan, W. Va.
Lincoln Electric Co., Cleveland, Ohio
Ohmite Manufacturing Co., Chicago, Ill.
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Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Thompson & Co., Oakmont, Pa.
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Welsh Manufacturing Co., Providence, R. I.
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STUD WELDERS

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(See: "Cable Connectors," "Welding Cable Lugs")

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(See: Carbon Arc Torches")

TORCHES, Carbon-Arc-Air, Gouging and Cutting

(See: "Gougers")

TORCHES, Rock Piercing, Cutting

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TRANSFORMERS, Arc Welding

(See: "A-C Arc Welders")

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Weldit, Inc., Detroit, Mich.

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WELDERS, Arc

(See: "A-C Arc Welders," "D-C Arc Welders," and the various welder categories)

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Anthony, F. M., Co., Piedmont, Calif.
Burdett Oxygen Co., Cleveland, Ohio
Cam-Lok Div. of Empire Prod., Inc., Cincinnati, Ohio
Chicago Tool & Engineering Co., Chicago, Ill.
Erico Products, Inc., Cleveland, Ohio

(Continued on page 26)

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45 and 180°

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JACKSON PRODUCTS
WARREN, MICHIGAN

WELDING CABLE LUGS

(Continued from page 25)

Fibre-Metal Prod. Co., The, Chester, Pa.
Harnischfeger Corp., Milwaukee, Wis.
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Rome Cable Corp., Rome, N. Y.
Simplex Wire & Cable Co., Cambridge, Mass.
Tweco Products Co., Wichita, Kan.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
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TWECOLUGS
FOR WELDING AND POWER CABLE

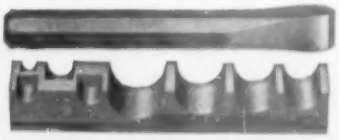
New copper solder type TWECOLUGS are especially designed for making cable connections; they have large diameter stud holes with ample wing nut clearance. 4 sizes for welding cables 6 through 4/0.4 sizes for power cables 14 through 4.

TWECO "LUG-SET" SPLICERS

4 sizes for cables 2/6 through 4/0. Split rubber sleeves for good insulation with friction tape.

Use TWECO "Lug-Set" Splicers and rubber sleeves to splice broken or worn welding cable. Real ends and short pieces can be quickly spliced into usable lengths.

TWECO "LUG-SET"



An eight-saddle back-up block and a special round-end punch for mechanically attaching Copper TWECOLUGS and "Lug-Set" Splicers. Two punch impacts the lug barrel for a quick connection with maximum strength and conductivity. All you need is a hammer.

TOP AND BOTTOM VIEW OF LUGS ATTACHED WITH TWECO "LUG-SET"

View of Splicer Attached with "Lug-Set"

Write for new TWECOLOG with complete TWECO line of arc welding cable accessories.

See Your Welding Supply Distributor

Tweco

PRODUCTS COMPANY WICHITA KANSAS

WELDING CABLES, Power

American Steel and Wire Co., Cleveland, Ohio
Anaconda Wire & Cable Co., New York, N. Y.
Belden Mfg. Co., Chicago, Ill.
Burdett Oxygen Co., Cleveland, Ohio
Collyer Insulated Wire Co., Inc., Pawtucket, R. I.
Hazard Insulated Wire Works, Div. of the Okonite Co., Wilkes-Barre, Pa.
National Electric Prod. Corp., Pittsburgh, Pa.
Okonite Co., The, Passaic, N. J.
Paranite Wire & Cable Div., Essex Wire Corp., Ft. Wayne, Ind.
Phelps Dodge Copper Products Corp., New York, N. Y.
Plastic Wire & Cable Corp., The, Jewitt City, Conn.
Roebling's Sons Co., John A., Trenton, N. J.
Rome Cable Corp., Rome, N. Y.
Simplex Wire & Cable Co., Cambridge, Mass.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Tweco Products Co., Wichita, Kan.
Victor Electric Wire & Cable Corp., Clifton, N. J.
Western Insulated Wire Co., Los Angeles, Calif.
Wickwire Spencer Steel Div., Colorado Fuel & Iron Corp., New York, N. Y.

LINCOLN WELDING CABLE

FLEXIBLE
DURABLE
LOWEST PRICE

"Stable Arc" The standard for high quality welding cable the world over. Unsurpassed for high conductivity, flexibility and durability.
"Lincoinductor" The new, low priced Lincoln welding cable. Retains same flexible strand design of "Stable Arc." Insulation, too, is of high quality construction. Excellent oil resistance.

Ask for Bulletin 487. Write, THE LINCOLN ELECTRIC COMPANY, Dept. 713, Cleveland 17, Ohio.

Sales Offices and Field Service Shops in all Principal Cities.

WELDING and CUTTING EQUIPMENT, Underwater

Arcos Corp., Philadelphia, Pa.
American Oxygen Service Corp., Harrison, N. J.
Bastian-Blessing Co., The, Chicago, Ill.
Burdett Oxygen Co., Cleveland, Ohio
Chicago Tool & Engineering Co., Chicago, Ill.
Craftsweld Equipment Corp., Long Island, N. Y.
Dockson Corp., Detroit, Mich.
K-G Equipment Co., Inc., Allentown, Pa.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Milburn, Alexander, Inc., Baltimore, Md.
Nageldinger & Sons, Inc., Bronx, N. Y.
National Cylinder Gas Co., Chicago, Ill.
National Welding Equipment Co., San Francisco, Calif.
Oxo Welding Equip. Co., Chicago, Ill.
Sight Feed Generator Co., West Alexandria, Ohio
Smith Welding Equip. Corp., Minneapolis, Minn.
Thompson Engineering Co., Grand Rapids, Mich.
Victor Equipment Co., San Francisco, Calif.
Weldit, Inc., Detroit, Mich.

WELDING GENERATORS, D-C

Air Reduction Sales Co., New York, N. Y.
American Elin Corp., New York, N. Y.
Electric Arc, Inc., Newark, N. J.
General Electric Co., Schenectady, N. Y.
Hobart Bros. Co., Troy, Ohio
Lincoln Electric Co., The, Cleveland, Ohio

WELDING PISTOL, Vibrating

Metallizing Co. of America, Chicago, Ill.
Metallizing Engineering Co., Long Island, N. Y.

• • •

COMPLETE ADDRESSES OF THESE AND OTHER MANUFACTURERS

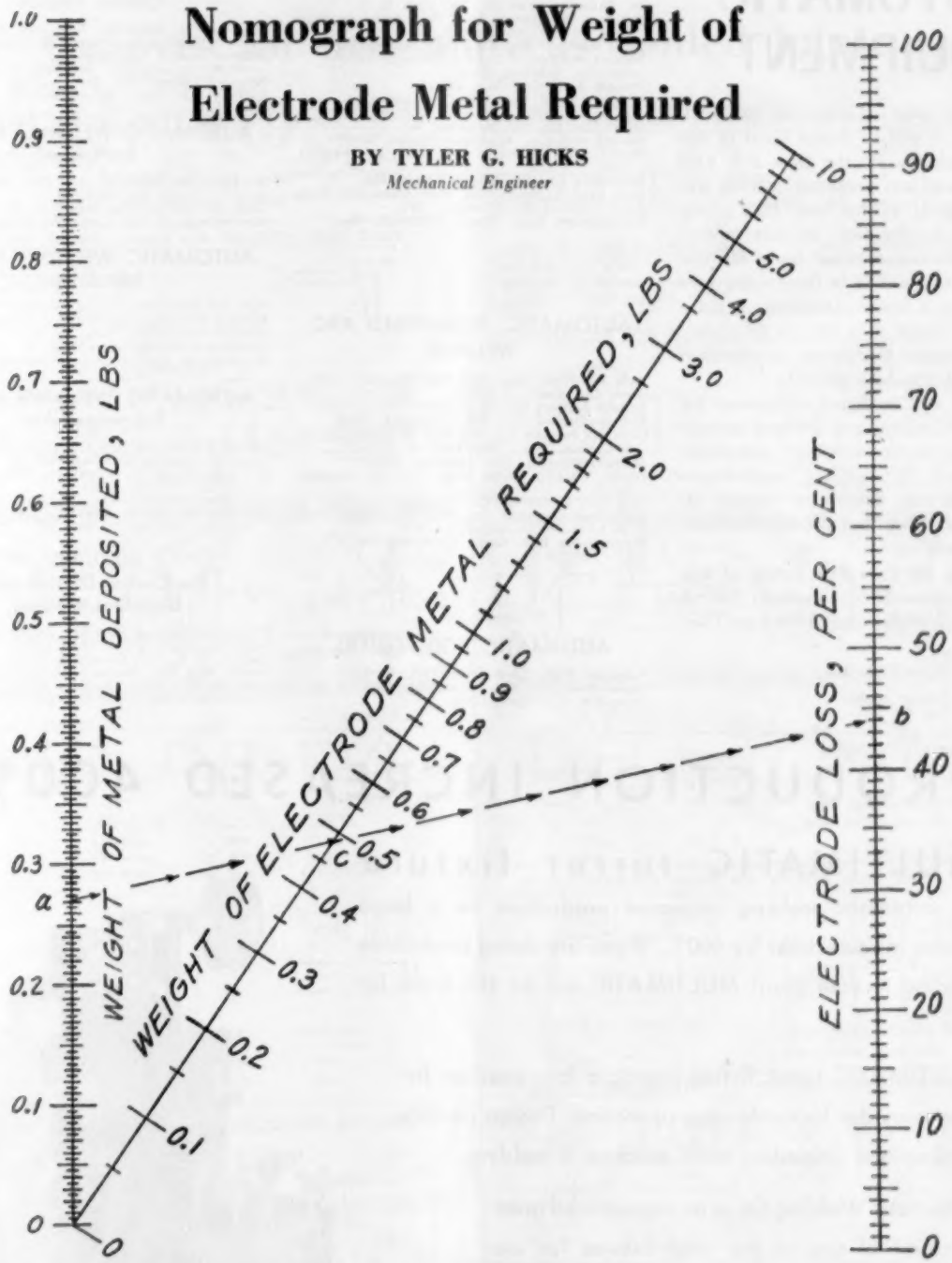
can be found in

NAMES AND ADDRESSES SECTION

• • •

Nomograph for Weight of Electrode Metal Required

BY TYLER G. HICKS
Mechanical Engineer



THE ACCOMPANYING chart gives quick estimates of the weight of electrode metal required for a given joint. It is based on the equation:

$$W = \frac{\text{weight of metal deposited, lb}}{1 - \text{electrode loss}}$$

where

W = electrode weight required, lb

Example: An angle joint welded with a ⅝-in. coated electrode requires 0.272 lb of metal per foot of length. What weight of electrode is needed per foot if electrode loss is 44%?

Solution: Enter the chart on the left at 0.272 lb of metal deposited and draw a straight line *ab* across to 44% electrode loss. At the intersection *c* with the sloping scale, read 0.49 lb of electrode metal required.

In estimating the total electrode loss, include the scrap end, spatter and coating losses. If specific data are lacking, scrap end loss can be assumed as 17%; spatter loss at 13% with bare electrodes; spatter and coating loss together as 27% with coated electrodes.

The weight of metal deposited includes the volume required to fill the joint plus reinforcement.

Although the equation used in plotting this chart is available in most welding texts, one McGraw-Hill Book Co. volume in which it can be checked is *Standard Handbook for Electrical Engineers*, 1949, Section 18, par. 219.

AUTOMATIC EQUIPMENT

If it is used for automatic arc welding, it will be found listed in this classification. At the time this Fact File Issue was prepared, NWSA was undecided as to how this group should be handled, so our editors were given somewhat more latitude than was possible in those categories carrying a lower classification number.

Automatic equipment is classified between numbers 400-499.

Here will be found equipment for open-arc, submerged-arc and carbon-arc automatic welding; automatic Mig and Tig welding applications using argon, helium or carbon dioxide, and jigs and fixtures for automatic welding.

While the Fact File listing of this classification is alphabetical, NWSA has developed two sub-headings. They are:

430 Miscellaneous
490 Accessories

AUTOMATIC ARC WELDERS

Air Reduction Sales Co., New York, N. Y.
American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
Auto Arc-Weld Mfg. Co., The, Cleveland, Ohio
Bernard Welding Equip. Co., Chicago, Ill.
Glenn Co., Oakland, Calif.
Hobart Bros. Co., Troy, Ohio
Lincoln Electric Co., The, Cleveland, Ohio
Mid-States Welder Mfg. Co., Chicago, Ill.
Miller Elec. Co. Inc., Appleton, Wis.
Morton Mfg. Co., Muskegon Heights, Mich.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Reid-Avery Co., Dundalk, Baltimore, Md.
Sight Feed Generator Co., West Alexandria, Ohio
Smith Corp., A. O., Milwaukee, Wis.
Westinghouse Elec., Corp., Pittsburgh, Pa.

AUTOMATIC, SUBMERGED ARC WELDERS

Auto Arc-Weld Mfg. Co., The, Cleveland, Ohio
Glenn Co., Oakland, Calif.
Hobart Brothers Co., Troy, Ohio
Lincoln Electric Co., The, Cleveland, Ohio
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Miller Elec. Mfg. Co, Appleton, Wis.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Penn Tool & Machine Co., Danville, Ill.
Sight Feed Generator Co., West Alexandria, Ohio
Smith Corp., A. O., Milwaukee, Wis.
Westinghouse Elec. Corp., Pittsburgh, Pa.

AUTOMATIC ROD FEEDERS

Aufhauser Bros., Corp., New York, N. Y.
Moslo Machinery Co., Cleveland, Ohio.
Yoder Co., Cleveland, Ohio

AUTOMATIC WELDING HEADS, Carbon Dioxide

Air Reduction Sales Co., New York, N. Y.
Bernard Welding Equipment Co., Chicago, Ill.
General Electric Co., York, Pa.
Linde Air Products Co., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Smith, A. O., Corp., Milwaukee, Wis.

AUTOMATIC WELDING HEADS, Inert Gas

Air Reduction Sales Co., New York, N. Y.
General Electric Co., York, Pa.
Linde Air Products Co., New York, N. Y.
Westinghouse Electric Corp., Pittsburgh, Pa.

AUTOMATIC WELDING HEADS, Metal Arc

Auto Arc Weld Mfg. Co., Cleveland, Ohio
Bernard Welding Equipment Co., Chicago, Ill.
General Electric Co., York, Pa.
Reid-Avery Co., Baltimore, Md.
Westinghouse Electric Corp., Pittsburgh, Pa.

AUTOMATIC WELDING HEADS, Submerged Arc

Lincoln Electric Co., The, Cleveland, Ohio
Linde Air Products Co., New York, N. Y.
Smith, A. O., Corp., Milwaukee, Wis.
Stoody Co., Whittier, Calif.
Auto Arc Weld Mfg. Co., Cleveland, Ohio
American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.

FIXTURES For Carbon-Dioxide and Inert-Gas Welding

Automatic Welding Co., Elm Grove, Wis.
Automatic Welding Co., Tulsa, Okla.
Herrich, C. B., Co., Cleveland, Ohio
Morton Mfg. Co., Muskegon Heights, Mich.
Peck, Cecil C., Co., Cleveland, Ohio
Progressive Welder Sales Co., Detroit, Mich.

PRODUCTION INCREASED 400%

MULTIMATIC turret fixture for automatic welding increased production for a large tractor manufacturer by 400%. If you are doing production welding in your plant MULTIMATIC will do the same for you.

MULTIMATIC turret fixture (right), a four position fixture, provides for continuous operation. Design permits loading and unloading while machine is welding.

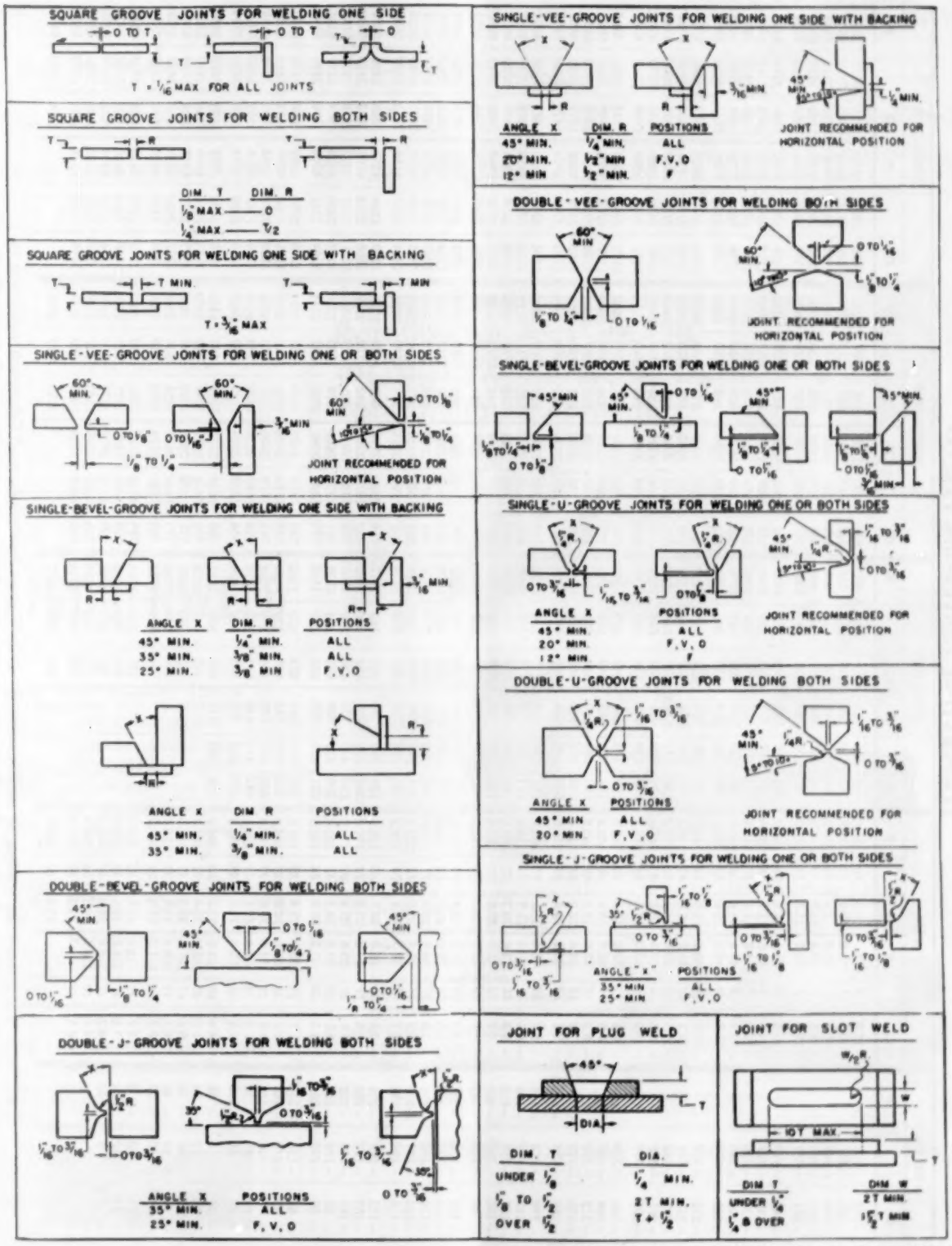
Automatic Welding Co. is an experienced manufacturer of special jigs and fixtures for use with submerged arc or carbon dioxide welding heads. See us to solve your "special" welding problems.

Write for catalog and other data

AUTOMATIC WELDING CO.

ELM GROVE, WIS.
Phone: Milwaukee—Sunset 2-6400

Grooves for arc- and gas-welded joints



From Welding Handbook, American Welding Society, Third Edition

Temperature Conversion Tables

TEMPERATURE CONVERSION TABLES*

−459.4 to 0			0 to 100						100 to 1000						1000 to 2000						2000 to 3000					
C		F	C		F	C		F	C		F	C		F	C		F	C		F	C		F	C		F
−273	−459.4		−17.8	0	32	10.0	50	122.0	38	100	212	260	500	932	538	1000	1832	816	1500	2732	1093	2000	3632	1371	2500	4532
−268	−450		−17.2	1	33.8	10.6	51	123.8	43	110	230	266	510	950	543	1010	1850	821	1510	2750	1099	2010	3650	1377	2510	4550
−262	−440		−16.7	2	35.6	11.1	52	125.6	49	120	248	271	520	968	549	1020	1868	827	1520	2768	1104	2020	3668	1382	2520	4568
−257	−430		−16.1	3	37.4	11.7	53	127.4	54	130	266	277	530	986	554	1030	1886	832	1530	2786	1110	2030	3686	1388	2530	4586
−251	−420		−15.6	4	39.2	12.2	54	129.2	60	140	284	282	540	1004	560	1040	1904	838	1540	2804	1116	2040	3704	1393	2540	4604
−246	−410		−15.0	5	41.0	12.8	55	131.0	66	150	302	288	550	1022	566	1050	1922	843	1550	2822	1121	2050	3722	1399	2550	4622
−240	−400		−14.4	6	42.8	13.3	56	132.8	71	160	320	293	560	1040	571	1060	1940	849	1560	2840	1127	2060	3740	1404	2560	4640
−234	−390		−13.9	7	44.6	13.9	57	134.6	77	170	338	299	570	1058	577	1070	1958	854	1570	2858	1132	2070	3758	1410	2570	4658
−229	−380		−13.3	8	46.4	14.4	58	136.4	82	180	356	304	580	1076	582	1080	1976	860	1580	2876	1138	2080	3776	1416	2580	4676
−223	−370		−12.8	9	48.2	15.0	59	138.2	88	190	374	310	590	1094	588	1090	1994	866	1590	2894	1143	2090	3794	1421	2590	4694
−218	−360		−12.2	10	50.0	15.6	60	140.0	93	200	392	316	600	1112	593	1100	2012	871	1600	2912	1149	2100	3812	1427	2600	4712
−212	−350		−11.7	11	51.8	16.1	61	141.8	99	210	410	321	610	1130	599	1110	2030	877	1610	2930	1154	2110	3830	1432	2610	4730
−207	−340		−11.1	12	53.6	16.7	62	143.6	100	212	413.6	327	620	1148	604	1120	2048	882	1620	2948	1160	2120	3848	1438	2620	4748
−201	−330		−10.6	13	55.4	17.2	63	145.4	104	220	428	332	630	1166	610	1130	2066	888	1630	2966	1166	2130	3866	1443	2630	4766
−196	−320		−10.0	14	57.2	17.8	64	147.2	110	230	446	338	640	1184	616	1140	2084	893	1640	2984	1171	2140	3884	1449	2640	4784
−190	−310		−9.4	15	59.0	18.3	65	149.0	116	240	464	343	650	1202	621	1150	2102	899	1650	3002	1177	2150	3902	1454	2650	4802
−184	−300		−8.9	16	60.8	18.9	66	150.8	121	250	482	349	660	1220	627	1160	2120	904	1660	3020	1182	2160	3920	1460	2660	4820
−179	−290		−8.3	17	62.6	19.4	67	152.6	127	260	500	354	670	1238	632	1170	2138	910	1670	3038	1188	2170	3938	1466	2670	4838
−173	−280		−7.8	18	64.4	20.0	68	154.4	132	270	518	360	680	1256	638	1180	2156	916	1680	3056	1193	2180	3956	1471	2680	4856
−169	−273	−459.4	−7.2	19	66.2	20.6	69	156.2	138	280	536	366	690	1274	643	1190	2174	921	1690	3074	1199	2190	3974	1477	2690	4874
−168	−270	−454	−6.7	20	68.0	21.1	70	158.0	143	290	554	371	700	1292	649	1200	2192	927	1700	3092	1204	2200	3992	1482	2700	4892
−162	−260	−436	−6.1	21	69.8	21.7	71	159.8	149	300	572	377	710	1310	654	1210	2210	932	1710	3110	1210	2210	4010	1488	2710	4910
−157	−250	−418	−5.6	22	71.6	22.2	72	161.6	154	310	590	382	720	1328	660	1220	2228	938	1720	3128	1216	2220	4028	1493	2720	4928
−151	−240	−400	−5.0	23	73.4	22.8	73	163.4	160	320	608	388	730	1346	666	1230	2246	943	1730	3146	1221	2230	4046	1499	2730	4946
−146	−230	−382	−4.4	24	75.2	23.3	74	165.2	166	330	626	393	740	1364	671	1240	2264	949	1740	3164	1227	2240	4064	1504	2740	4964
−140	−220	−364	−3.9	25	77.0	23.9	75	167.0	171	340	644	399	750	1382	677	1250	2282	954	1750	3182	1232	2250	4082	1510	2750	4982
−134	−210	−346	−3.3	26	78.8	24.4	76	168.8	177	350	662	404	760	1400	682	1260	2300	960	1760	3200	1238	2260	4100	1516	2760	5000
−129	−200	−328	−2.8	27	80.6	25.0	77	170.6	182	360	680	410	770	1418	688	1270	2318	966	1770	3218	1243	2270	4118	1521	2770	5018
−123	−190	−310	−2.2	28	82.4	25.6	78	172.4	188	370	698	416	780	1436	693	1280	2336	971	1780	3236	1249	2280	4136	1527	2780	5036
−118	−180	−292	−1.7	29	84.2	26.1	79	174.2	193	380	716	421	790	1454	699	1290	2354	977	1790	3254	1254	2290	4154	1532	2790	5054
−112	−170	−274	−1.1	30	86.0	26.7	80	176.0	199	390	734	427	800	1472	704	1300	2372	982	1800	3272	1260	2300	4172	1538	2800	5072
−107	−160	−256	−0.6	31	87.8	27.2	81	177.8	204	400	752	432	810	1490	710	1310	2390	988	1810	3290	1266	2310	4190	1543	2810	5090
−101	−150	−238	0.0	32	89.6	27.8	82	179.6	210	410	770	438	820	1508	716	1320	2408	993	1820	3308	1271	2320	4208	1549	2820	5108
−96	−140	−220	0.6	33	91.4	28.3	83	181.4	216	420	788	443	830	1526	721	1330	2426	999	1830	3326	1277	2330	4226	1554	2830	5126
−90	−130	−202	1.1	34	93.2	28.9	84	183.2	221	430	806	449	840	1544	727	1340	2444	1004	1840	3344	1282	2340	4244	1560	2840	5144
−84	−120	−184	1.7	35	95.0	29.4	85	185.0	227	440	824	454	850	1562	732	1350	2462	1010	1850	3362	1288	2350	4262	1566	2850	5162
−79	−110	−166	2.2	36	96.8	30.0	86	186.8	232	450	842	460	860	1580	738	1360	2480	1016	1860	3380	1293	2360	4280	1571	2860	5180
−73	−100	−148	2.8	37	98.6	30.6	87	188.6	238	460	860	466	870	1598	743	1370	2498	1021	1870	3398	1299	2370	4298	1577	2870	5198
−68	−90	−130	3.3	38	100.4	31.1	88	190.4	243	470	878	471	880	1616	749	1380	2516	1027	1880	3416	1304	2380	4316	1582	2880	5216
−62	−80	−112	3.9	39	102.2	31.7	89	192.2	249	480	896	477	890	1634	754	1390	2534	1032	1890	3434	1310	2390	4334	1588	2890	5234
−57	−70	−94	4.4	40	104.0	32.2	90	194.0	254	490	914	482	900	1652	760	1400	2552	1038	1900	3452	1316	2400	4352	1593	2900	5252
−51	−60	−76	5.0	41	105.8	32.8	91	195.8				488	910	1670	766	1410	2570	1043	1910	3470	1321	2410	4370	1599	2910	5270
−46	−50	−58	5.6	42	107.6	33.3	92	197.6				493	920	1688	771	1420	2588	1049	1920	3488	1327	2420	4388	1604	2920	5288
−40	−40	−40	6.1	43	109.4	33.9	93	199.4				499	930	1706	777	1430	2606	1054	1930	3506	1332	2430	4406	1610	2930	5306
−34	−30	−22	6.7	44	111.2	34.4	94	201.2				504	940	1724	782	1440	2624	1060	1940	3524	1338	2440	4424	1616	2940	5324
−29	−20	−4	7.2	45	113.0	35.0	95	203.0				510	950	1742	788	1450	2642	1066	1950	3542	1343	2450	4442	1621	2950	5342
−23	−10	14	7.8	46	114.8	35.6	96	204.8				516	960	1760	793	1460	2660	1071	1960	3560	1349	2460	4460	1627	2960	5360
−17.8	0	32	8.3	47	116.6	36.1	97	206.6				521	970	1778	799	1470	2678	1077	1970	3578	1354	2470	4478	1632	2970	5378
			8.9	48	118.4	36.7	98	208.4				527	980	1796	804	1480	2696	1082	1980	3596	1360	2480	4496	1638	2980	5396
			9.4	49	120.2	37.2	99	210.2				532	990	1814	810	1490	2714	1088	1990	3614	1366	2490	4514	1643	2990	5414
						37.8	100	212.0				538	1000	1832				1093	2000	3632				1649	3000	5432

*** Look up reading in middle column. If in degrees Centigrade, read Fahrenheit equivalent in right hand column; if in Fahrenheit degrees, read Centigrade equivalent in left hand column.**

FLUX DISPENSERS

Air Reduction Sales Co., New York, N. Y.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
Aluminum Co. of America, Pittsburgh, Pa.
Gasflux Co., The, Mansfield, Ohio
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Safety Clothing & Equip. Co., Cleveland, Ohio
Sight Feed Generator Co., West Alexandria, Ohio
Victor Equipment Co., San Francisco, Calif.
Weldit, Inc., Detroit, Mich.

FLUX, Heating-Element Repair

Chanite Sales Co., Fort Worth, Tex.
Metal Bond Mfg. Co., St. Louis, Mo.
National Welders Supply Co., Charlotte, N. C.
Superior Flux Co., Cleveland, Ohio

FLUX RECOVERY EQUIPMENT

American Vacuum Co., Chicago, Ill.
Farralloy Co., Philadelphia, Pa.
Invincible Vacuum Cleaner Mfg. Co., Dover, Ohio
Kent Company, Inc., The, Rome, N. Y.
Peck, Cecil C., Co., Cleveland, Ohio

HEADS, Automatic Arc

(See: "Automatic Welding Heads")

RAIL WELDERS

Hobart Bros. Co., Troy, Ohio
Multi-Hydromatic Welding & Mfg. Co., East Detroit, Mich.
Niagara Machine & Tool Works, Buffalo, N. Y.
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Progressive Welder Sales Co., Detroit, Mich.
Resistance Welder Corp., Detroit, Mich.
Sight Feed Generator Co., West Alexandria, Ohio
Stryco Mfg. Co., San Francisco, Calif.

LINCOLNWELD

- **Fully Automatic**
- **Semi-Automatic**

FAST, HIGH QUALITY HIDDEN ARC WELDING FOR PRODUCTION AND FABRICATION

"AUTOMATIC LINCOLNWELD"

Provides continuous wire feed. High intensity arc insures maximum penetration . . . eliminates need for most joint preparation. Get details in Bulletin 439.

"TWINARC"

Automatic welding with two electrodes. Attaches to "Automatic Lincolnweld" LAF-2, LAF-3 and LAF-4. Get details in Bulletin 1328.

"SPREADARC"

Oscillating attachment for automatic hardsurfacing or building up with Automatic Lincolnweld LAF-2 and LAF-3. Get details in Bulletin 1330.

"MANUAL LINCOLNWELD"

Retains all benefits of faster, easier, hidden arc welding but provides the flexibility and maneuverability of hand welding. Get details in Bulletin 1303.

"LINCOLNWELD" FLUXES for Semi-Automatic and Full Automatic Hidden Arc Welding.

THE LINCOLN ELECTRIC COMPANY
Dept. 713, Cleveland 17, Ohio

Sales Offices and Field Service Shops in All Principal Cities.

WELDERS, Automatic, Submerged Arc

SUBMERGED ARC FLUX CRUSHERS

American Pulverizer Co., St. Louis, Mo.
Gruendler, G. H., New York, N. Y.
Holmes, Robert & Bros., Inc., Danville, Ill.

TURNING ROLLS

Automatic Welding Co., Elm Grove, Wis.
Aronson Machine Co., Arcade, N. Y.
Bissett Steel Co., The, Cleveland, Ohio
Johnson Mach. Works, Eau Claire, Wis.
Morton Mfg. Co., Muskegon Heights, Mich.
Oxo Welding Equip. Co., Chicago, Ill.
Ransome Div., Worthington Pump & Machinery Corp., Dunellen, N. J.
Service Machine Co., Elizabeth, N. J.
Unique Turntable & Equipment Corp., Brooklyn, N. Y.
Webb Corp., Webb City, Mo.
Worthington Pump & Machinery Corp., Harrison, N. J.

Rexarc

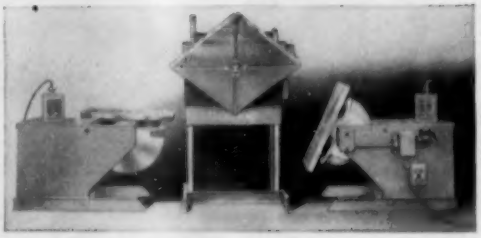
AUTOMATIC WELDERS AND POSITIONERS

Complete automatic welder-positioner units for welding tractor rails, rollers, sheaves and countless other longitudinal and circular shapes. Special positioners engineered for specific applications. Write for full information.

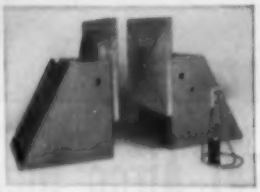
THE SIGHT FEED GENERATOR CO.
West Alexandria, Ohio, U.S.A.

Steady, Positive, Precision Rotation for AUTOMATIC WELDING with *Aronson* Positioning Equipment.

UNIVERSAL Balanced POSITIONING
Model C 500 shown
25 lbs. to 2,000 lbs. capacity



HEAVY DUTY GEAR DRIVEN POSITIONING
Model HD 25 shown
500 lbs. to 24,000 lbs. capacity



HEAD and TAIL STOCK POSITIONING
Model HTS 5 shown
Capacities 5,000 lbs. to 160,000 lbs.

MODEL 21 (shown) SUPER GEAR DRIVEN POSITIONER with powered rotation tilt and elevation.

MODEL X-21 Powered rotation, ball bearing manual tilt and elevation.

MODEL 21-P Powered rotation and tilt, ball bearing manual elevation.

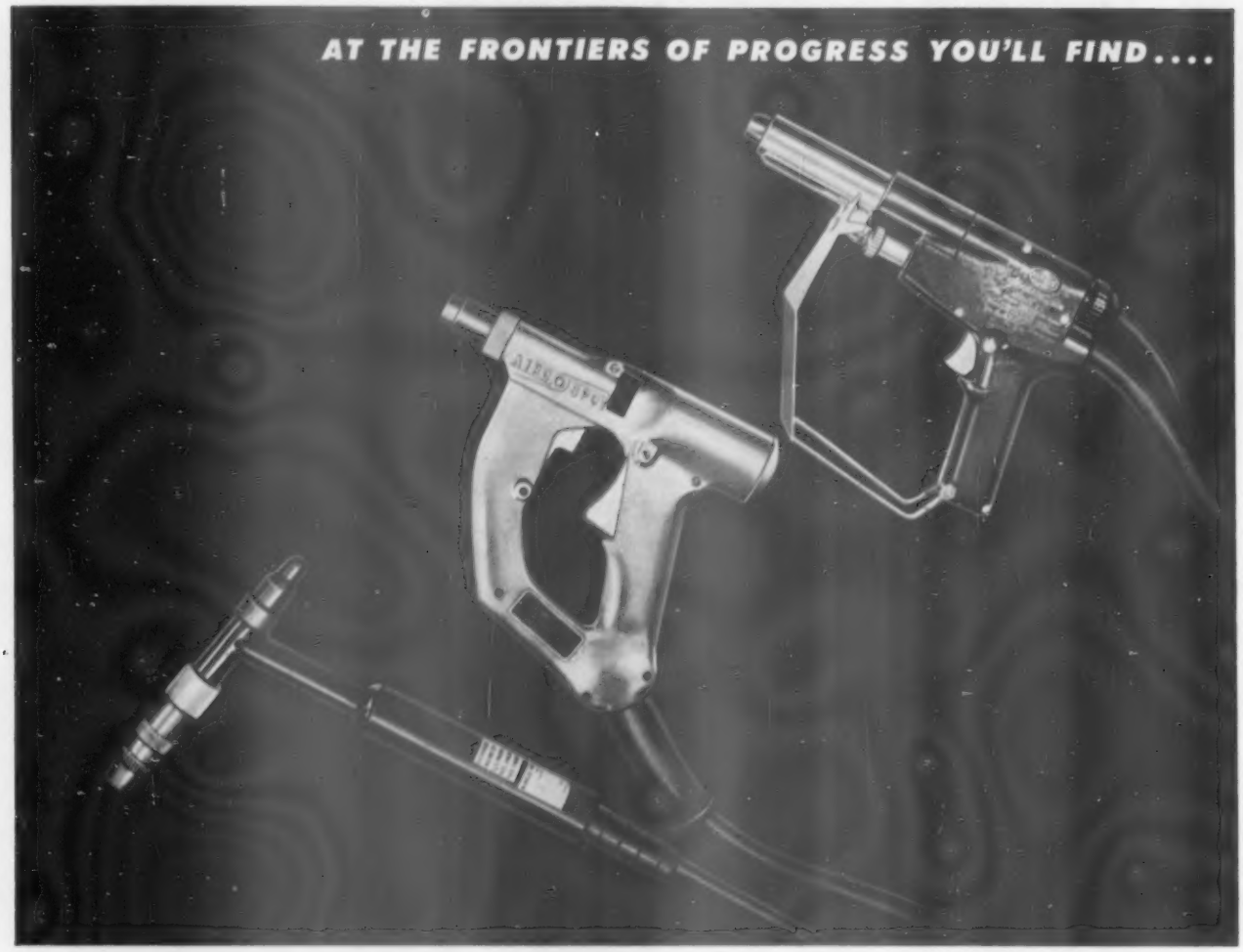
MODEL 21-E Powered rotation and elevation, ball bearing manual tilt.

MODEL X-21-PE Powered rotation, tilt and elevation.
5000 lbs. capacity @ 6" CG location.

Aronson TRACTRED Turning Rolls
Steady, positive, precision rotation for automatic welding. MODEL T1 (shown) capacity 6,000 lbs. per unit. MODEL T2 capacity 12,000 lbs. per unit. MODEL T3 capacity 18,000 lbs. per unit.

HEAVY-DUTY PRECISION BUILT RUBBER TIRED TURNING ROLLS
5,000 lbs. to 150 tons capacity

Aronson **MACHINE COMPANY**
ARCADE, NEW YORK



Get Airco Inert-Gas Welding into your Production Picture!

Lower costs through quality and speed . . . that's Airco's answer to your production problem – even when the materials include aluminum, bronze, copper, nickel, stainless steel . . . all engineering metals.

The Aircomatic welding unit, for example, was researched and designed by Airco to produce top-quality welds . . . especially in "problem" metals and alloys without flux . . . with minimum plate edge preparation and little or no preheat. In performance, Airco's Heliwelding is similar – though engineered for high-speed welding of *thin* sections of metals – any metals.

And with the newest Airco addition to inert-gas-shielded welding, Aircospot, you can weld from one side of the joint – eliminating jigs and backup plates. Aircospot is the perfect primary tool for fabrication and no finer cost-saving tool for tack welding has ever been devised.

You'll want to learn more about how Air Reduction's inert-gas-shielded arc welding processes can serve you. Contact your nearby Airco Representative, Authorized Airco Dealer – or write Airco direct.

AIRCO®

AIR REDUCTION

60 East 42nd Street • New York 17, N. Y.

Divisions of Air Reduction Company, Incorporated, with offices and dealers in most principal cities

Air Reduction Sales Company
Air Reduction Pacific Company

Represented internationally by Airco Company International

Foreign Subsidiaries:
Air Reduction Canada Limited,
Cuban Air Products Corporation

Products of the divisions of Air Reduction Company, Incorporated, include: AIRCO — industrial gases, welding and cutting equipment, and acetylenic chemicals • PURECO — carbon dioxide, liquid-solid ("DRY-ICE") • OHIO — medical gases and hospital equipment • NATIONAL CARBIDE — pipeline acetylene and calcium carbide • COLTON — polyvinyl-acetates, alcohols and other synthetic resins.

AN AIR REDUCTION PRODUCT

AIRCO items for inert-gas-shielded arc welding

Air Reduction is your preferred source for the shielding gases you need. Argon, helium, or a mixture of gases are employed for Aircomatic, Heliwelding, and Aircospot. Airco supplies them all. Prompt bulk delivery, as well as by the cylinder, are obtainable.

Consult your Airco District Office for specific information concerning gas mixtures and recommendations based on the type of work you are doing.

Airco supplies a complete range of tungsten electrodes for AC and DC Heliwelding. Electrodes are available in pure tungsten, thoriated tungsten, (Thor-Tung) and zirconium tungsten. All three types are offered in seven diameters from .040" to ½" and in four lengths from 3" to 18". Other lengths of all electrodes on special order.

Aircomatic-Heliweld filler wire is processed to conform to the highest standards for surface finish, cast and cleanliness. Its use assures smooth, uninterrupted wire feed. Specifically designed for use in the Aircomatic manual and automatic head, and the Heliweld filler wire feeder. *Write for literature on these items.*

INERT GAS EQUIPMENT

MIG and Tig welding methods are becoming increasingly important to the metal-working industry. Developed only during the past 15 years, these processes have become the major means of joining the light metals—aluminum and magnesium—and stainless steel.

These processes now are finding more extensive applications for joining mild steel, especially in the thinner gages.

For Fact File purposes, the items covered by the inert-gas equipment heading will include only Mig and Tig equipment for manual applications. This is at variance with the NWSA Tab and Index System, which includes automatic processes in this category as well. In the Fact File Issue, all automatic equipment will be found under that classification.

This inert-gas classification has been assigned numbers between 500-599. The sub-headings of this group are:

510 Automatic inert equipment
520 Manual inert equipment
580 Miscellaneous
590 Accessories

Fact File listings of inert equipment are alphabetical.

ARC WELDERS, Inert Gas Shielded

(See: "Inert-Gas Shield Arc Welders")

ELECTRODE HOLDERS, Inert-Gas-Shielded

Air Reduction Sales Co., New York, N.Y.
Bernard Welding Equipment Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Metal & Thermit Corp., N. Y. 17, N. Y.
National Cylinder Gas Co., Chicago 11, Ill.
National Technical Products, Inc., Englewood, N. J.

GAS CUPS

(For inert-gas welding)

Ceramic Cups, Inc., Mineola, Long Island, N. Y.
National Technical Products, Inc., Englewood, N. J.
Tec Welding Co., Carlstadt, N. J.

INERT GAS SHIELDED ARC WELDERS

Air Reduction Sales Co., New York, N. Y.
Bernard Welding Equip. Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Hobart Brothers Co., Troy, Ohio
Linde Air Products Corp., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Metal & Thermit Corp., New York, N. Y.
Mid-States Welder Mfg. Co., Chicago, Ill.
Miller Elec. Mfg. Co., Appleton, Wis.
Morton Mfg. Co., Muskegon Heights, Mich.
National Cylinder Gas Co., Chicago, Ill.
North American Philips Co., Inc., Lewiston, Me.
Smith, A. O., Corp., Milwaukee, Wis.
Welding Apparatus Co., Chicago, Ill.

INERT GAS, SPOT WELDERS

Air Reduction Sales Co., N. Y., N. Y.
Linde Air Products Company, a unit of Union Carbide and Carbon Corp., New York 17, N. Y.
Miller Electric Mfg. Co., Appleton, Wis.
Mid-States Welder Mfg., Chicago, Ill.

INERT GAS TORCHES

Air Reduction Sales Co., New York, N. Y.
American Oxygen Service Corp., Harrison, N. J.
Bernard Welding Equip. Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Linde Air Products Co., The Unit of Union Carbide & Carbon Corp., New York, N. Y.
Liquid Carbonic Corp., Chicago, Ill.
Modern Welding Machine & Equipment Co., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Tec Welding Co., Carlstadt, N. J.

TIG and MIG CONTROLS

Acro Welder Mfg. Co., Milwaukee, Wis.
Air Reduction Sales Co., Div., Air Reduction Co., Inc., New York, N. Y.
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Linde Air Products Co., A Unit of Union Carbide and Carbon Corporation, New York 17, N. Y.
Mid-States Welder Mfg. Co., Chicago, Ill.
Miller Electric Mfg. Co., Appleton, Wis.
National Time & Signal Corp., Detroit, Mich.
Robotron Corp., Detroit, Mich.

TORCHES, Spot Welding, Inert Gas Shielded

Air Reduction Sales Co., N. Y., N. Y.
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.

• • •

COMPLETE ADDRESSES OF THESE AND OTHER MANUFACTURERS

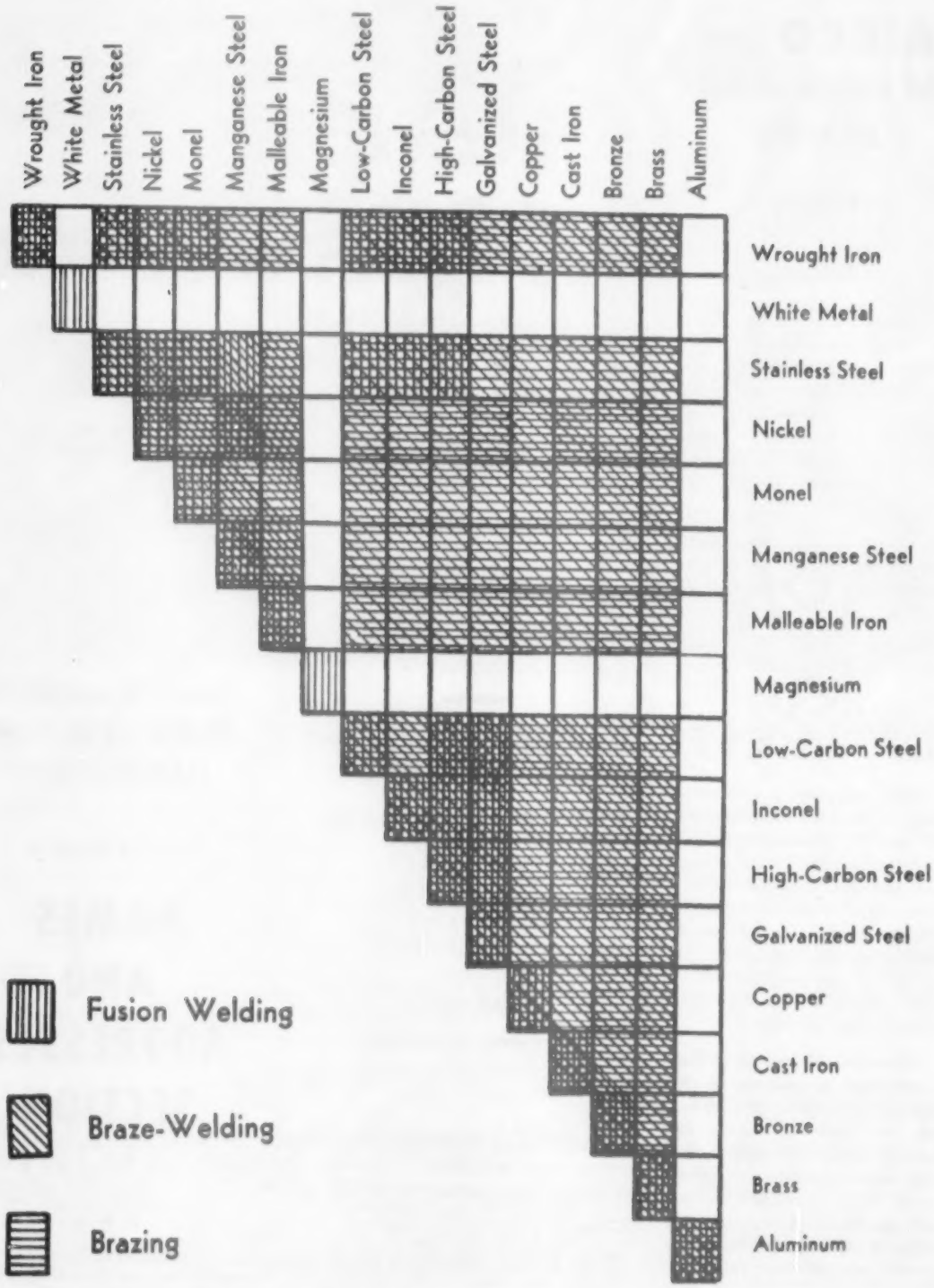
can be found in

NAMES AND ADDRESSES SECTION

• • •

Jiffy Joining Chart

GAS-WELDING processes you may select in order to join a given material to a similar or dissimilar metal. As an example, take malleable iron. You can fusion weld it only to itself, but you can join it to everything except aluminum, magnesium, or white metal by using either brazing or braze welding. Aluminum, as another example, can be joined only to aluminum, but either fusion welding, braze-welding or brazing may be employed.



FILLER METALS and FLUXES

COVERAGE of this classification is far more extensive than the title would indicate. In this group will be found filler metals for all welding processes, as well as all types of electrodes and electrode wire and alloys used in joining and building up metals.

Hence, this would include not only conventional electrodes and wires, but brazing alloys, metallizing wires and hardfacing materials. In addition, the fluxes necessary to make these materials join readily with the base metals are listed here.

Also included are processing equipment and ingredients for making electrodes.

The Fact File Issue has three separate alphabetical categories for this group: one for filler metals used in the arc process; another for those used in gas-welding, brazing and soldering; and a miscellaneous group for various types of hardening compounds, as well as processing equipment and ingredients. This NWSA group carries the following subheads:

610 Electrodes
620 Manual welding wire
630 Automatic welding wire
640 Metallizing wire
650 Brazing alloys
660 Solders and babbitts
680 Miscellaneous
690 Fluxes

Arc Process

ALUMINUM ELECTRODES

Air Reduction Sales Co., N. Y., N. Y.
Aladdin Rod & Flux Mfg. Co., Grand Rapids, Mich.
Allied Weld-Craft, Inc., Indianapolis, Ind.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
Aluminum Co. of America, Pittsburgh, Pa.
American Welding Alloy Corp., Brooklyn, N. Y.
Arcos Corp., Phila., Pa.
Eutectic Welding Alloys Co., Flushing, N. Y.
Hobart Bros. Co., Troy, Ohio
Lincoln Electric Co., The, Cleveland, Ohio
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Metal & Thermit Corp., New York, N. Y.
Morgan Aluminum Welding Rod Co., Cleveland, Ohio
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago 11, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles Calif.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Regle Industries, Kansas City, Mo.
Smith Corp., A. O., Milwaukee, Wis.
Trindl Products, Ltd., Chicago, Ill.
Victor Equipment Co., San Francisco, Calif.
Weldaloy Products Co., Detroit, Mich.
Welding Alloys Mfg., Newark, N. J.
Weldit, Inc., Detroit, Mich.
Wilson Welder and Metals Co., Inc., New York, N. Y.
Wooldridge Aluminum Welding Products, Inc., Malden, Mass.

ALUMINUM-BRONZE ELECTRODES

Air Reduction Sales Co., N. Y., N. Y.
Alloy Rods Co., York, Pa.
All State Welding Alloys Co., Inc., White Plains, N. Y.
American Brass Co., Waterbury, Conn.
Ampco Metal, Inc., Milwaukee, Wis.
Burdett Oxygen Co., The, Cleveland, Ohio
Commerce Pattern Foundry & Mach. Co., Detroit, Mich.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Metal & Thermit Corp., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Trindl Prod., Ltd., Chicago, Ill.
Victor Equipment Co., San Francisco, Calif.

ALUMINUM WIRE

Air Reduction Sales Co., N. Y., N. Y.
All-State Welding Alloys Co., Inc., White Plains N. Y.
Aladdin Rod & Flux Mfg. Co., Grand Rapids, Mich.
Aluminum Co. of America, Pittsburgh, Pa.
Anaconda Wire & Cable Co., New York, N. Y.
Drawalloy Corp., York, Pa.
General Electric Co., Schenectady, N. Y.
Kaiser Aluminum & Chemical Corp., Oakland, Calif.
Linde Air Products Co., A unit of Union Carbide and Carbon Corp., New York 17, N. Y.
Morgan Aluminum-Welding Rod Co., Cleveland, Ohio
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Reynolds Metals Co., Louisville, Ky.
United Wire & Supply Corp., Providence, R. I.
Welding Alloys Mfg. Co., Newark, N. J.
Wickwire Spencer Steel Div., Colorado Fuel & Iron Corp., New York, N. Y.

ARC ELECTRODE KITS

All-State Welding Alloys Co., Inc., White Plains, N. Y.
Atlas Welding Accessories Co., Ferndale, Mich.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Harnischfeger Corp., Milwaukee, Wic.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Trindl Prod., Ltd., Chicago, Ill.

ARC-OXYGEN ELECTRODES

American Oxygen Service Corp., Harrison, N. J.
Arcos Corp., Philadelphia, Pa.
Craftsweld Equipment Corp., Long Island City, N. Y.
Eutectic Welding Alloys Co., Flushing, N. Y.
Hobart Bros. Co., Troy, Ohio
International Nickel Co., Inc., The, New York, N. Y.
Krembs & Co., Chicago, Ill.
Lincoln Electric Co., The, Cleveland, Ohio
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Reid-Avery Co., Baltimore, Md.
Trindl Prod., Ltd., Chicago, Ill.
Westinghouse Electric Corp., Pittsburgh, Pa.

AUTOMATIC WELDING WIRE

Air Reduction Sales Co., New York, N. Y.
All-State Welding Alloys Co., White Plains, N. Y.
American Manganese Steel Div. of American Brake Shoe Co., Chicago Heights, Ill.
Arcos Corp., Phila., Pa.
Collins-Edmonds, Inc., Philadelphia, Pa.
Drawalloy Corp., York, Pa.
General Electric Co., York, Pa.
Lincoln Electric Co., Cleveland, Ohio
Linde Air Products Co., New York, N. Y.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Page Steel and Wire Div., Amer. Chain & Cable Co., Monessen, Pa.
Reid-Avery Co., Baltimore, Md.
Reynolds Metals Co., Louisville, Ky.
Sight Feed Generator Co., West Alexandria, Ohio
Smith, A. O., Corp., Milwaukee, Wis.
Standard Steel & Wire Co., Bolivar, Pa.
Stoody Co., Whittier, Calif.

BRONZE ELECTRODES

Air Reduction Sales Co., New York, N. Y.
Allied Weld-Craft, Inc., Indianapolis, Ind.
Alloy Rods Co., York, Pa.
All State Welding Alloys Co., Inc., White Plains, N. Y.

(Continued on page 35)

P&H Electrodes — for fast sound welds at lower cost on any job!

Uniform quality in a size and type for every need:

FOR MILD STEEL

APV	AWS Class E6010
AC-1	AWS Class E6011
PFA	AWS Class E6012
FR	AWS Class E6012
AC-3	AWS Class E6013
SM	AWS Class E6013
DH-2	AWS Class E6020
DH-5	AWS Class E6012 (modified)
DH-6	AWS Class E6020

FOR CAST-IRON

Harcast — for non-machinable welds
Nicast — for machinable welds

FOR HARD TO WELD STEELS

Low-Hydrogen Electrdes

70LA2	AWS Class E6015, E7015
DH-170	AWS Class E7016
PH25C	AWS Class E7015
75LP	AWS Class E8015
80LE	AWS Class E8015
90LE	AWS Class E9015
P&H 40C	AWS Class E9015
AW2B	AWS Class E9015
P&H #7	AWS Class E9016
90LH #2	AWS Class E10,016
P&H #12	AWS Class E10,016
P&H #21	AWS Class E12,016

FOR STAINLESS STEELS

AW-3C	Type 307
Harstain 18-8	Type 308
Harstain 18-8 Cb.	Type 347
Harstain 18-8 2Mo.	Type 316
Harstain 18-8 3Mo.	Type 317
Harstain 25-12	Type 309
Harstain 25-20	Type 310
Harchrome 5 Cr.	Type 502
Harchrome 16 Cr.	Type 430

FOR HARD SURFACING

Hartop Brown	Rockwell C — 35-40
Hartop Green	Rockwell C — 45-50
Hartop Red	Rockwell C — 50-55
Hartop Yellow	Rockwell C — 58-63

No matter what your welding problem may be there is a P&H electrode that helps you do it better, easier, faster — and for less. Let your P&H representative or distributor show you. Write for bulletin.

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FUSE-WELL No. 11, *Square*—Gray Cast Iron Welding Rod for Acetylene use in filling or building up new or worn castings producing machineable welds.

FUSE-WELL NO. 12

FUSE-WELL No. 12, *Round*—Has the same uses and analytical ingredients as Fuse-Well No. 11.

FUSE-WELL NO. 14 MOLY

FUSE-WELL No. 14, *Moly*—An Iron Base Rod with alloys added for finer grain structure and greater strength.

FUSE-WELL NO. 22

FUSE-WELL No. 22, *Electrode* — Light coated Rod to be used for AC or DC welding in the fabricating and repairing of cast iron castings.

"FUSE-WELL" No. 19
(Coated Hard-Surfacing Electrode)

"FUSE-WELL" No. 21—SQUARE • "FUSE-WELL" No. 26—ROUND
(5% Silicon—Cast Aluminum Rod)

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Fuse-Well Cast Welding Rods

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Weld Rod Division

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BRONZE ELECTRODES

(Continued from page 33)

American Agile Corp., Cleveland, Ohio
American Arc Welders, Inc., Roseau, Minn.
Ampco Metal, Inc., Milwaukee, Wis.
Arcos Corp., Phila., Pa.
Bridgeport Brass Co., Cleveland, Ohio
Central Steel & Wire Co., Chicago, Ill.
Champion Rivet Co., Cleveland, Ohio
Chase Brass & Copper Co., Inc., Waterbury, Conn.
Eutectic Welding Alloys Co., Flushing, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Hobart Bros. Co., The, Troy, Ohio
Johnston, A. P., Los Angeles, Calif.
Krembs & Co., Chicago, Ill.
Lincoln Electric Co., The, Cleveland, Ohio
Liquid Carbonic Corp., The, Wall Chemical Div., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Mueller Brass Co., Port Huron, Mich.
National Cylinder Gas Co., Chicago, Ill.
National Elec. Welding Mach. Co., Bay City, Mich.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Phillips, C. E., & Company, Detroit, Mich.
Phosphor Bronze Corp., The, Seymour, Conn.
Precision Welder Mfg. Co., Chicago, Ill.
Reid-Avery Co., Dundalk, Md.
Revere Copper & Brass, Inc., New York, N. Y.
Seymour Mfg. Co., Seymour, Conn.
Trindl Products, Ltd., Chicago, Ill.
Welding Equipment Supply Co., Detroit, Mich.
Titan Metal Mfg. Co., Belefonte, Pa.
Smith Corp., A. O., Milwaukee, Wis.

CARBON ELECTRODES

Albert & J. M. Anderson Mfg. Co., Boston, Mass.
Allen Electric & Equipment Co., Kalamazoo, Mich.
Arcair Co., Bremerton, Wash.
Atlas Welding Accessories Co., Ferndale, Mich.
Becker Bros. Carbon Co., Cicero, Ill.
Dixon Crucible Co., Joseph, Jersey City, N. J.
National Carbon Div., Union Carbide and Carbon Corp., New York, N. Y.
Ohio Carbon Co., The, Cleveland, Ohio
Pure Carbon Co., St. Marys, Pa.
Speer Carbon Co., St. Marys, Pa.
Stackpole Carbon Co., St. Mary's, Pa.

CAST-IRON ELECTRODES

Air Reduction Sales Co., New York, N. Y.
Allied Weld-Craft, Inc., Indianapolis, Ind.
Alloy Rods Co., York, Pa.
All State Welding Alloys Co., White Plains, N. Y.
American Agile Corp., Bedford, Ohio
American Arc Welders, Inc., Roseau, Minn.
Ampco Metal, Inc., Milwaukee, Wis.
Arcos Corp., Philadelphia, Pa.
Armite Laboratories, Los Angeles, Calif.
Central Steel & Wire Co., Chicago, Ill.
Champion Rivet Co., The, Cleveland, Ohio
Chicago Hardware Foundry Co., No. Chicago, Ill.
Delta Power Tool Div., Rockwell Mfg. Co., Milwaukee, Wis.
Eutectic Welding Alloys Co., Flushing, N. Y.
Ever-Tite Alloys Corp., New York, N. Y.
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Hobart Bros. Co., The, Troy, Ohio
Industrial Overlay Metals, Inc., Eaton, Ohio
International Nickel Co., Inc., New York, N. Y.
Krembs & Co., Chicago, Ill.
Lincoln Electric Co., The, Cleveland, Ohio
Liquid Carbonic Corp., The, Wall Chem. Div., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
McKay Co., Pittsburgh, Pa.
Metal & Thermit Corp., New York, N. Y.
Miller Electric Mfg. Co., Richmond, Ind.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Carbon Co., Inc., Cleveland, Ohio
National Cylinder Gas Co., Chicago, Ill.
Northeast Metals Co., Philadelphia, Pa.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Page Steel & Wire Div., American Chain & Cable Co., Inc., Monessen, Pa.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Phillips, C. E. & Co., Detroit, Mich.
Precision Welder Mfg. Co., Chicago, Ill.
Reid-Avery Co., Dundalk, Baltimore, Md.
Resisto-Loy Company, S. W., Grand Rapids, Mich.
Shober Sales, Inc., Stockton, Calif.
Sight Feed Generator Co., The, West Alexandria, Ohio
Smith Corp., A. O., Milwaukee, Wis.
Standard Steel & Wire Co., Boliver, Pa.
Trindl Products, Ltd., Chicago, Ill.
US Electric Welding Corp., Toledo, Ohio
Welding Equipment & Supply Co., Detroit, Mich.
Weldit, Inc., Detroit, Mich.
Westinghouse Elec. Corp., Pittsburgh, Pa.

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As The Leaders For
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(See: "Powder-Metal Electrodes")

COPPER ELECTRODES

Air Reduction Sales Co., New York, N. Y.
Akron Bronze & Aluminum Co., Akron, Ohio
American Brass Co., Waterbury, Conn.
Ampco Metal, Inc., Milwaukee, Wis.
Bridgeport Brass Co., Bridgeport, Conn.
Cleveland Tungsten, Inc., Cleveland, Ohio
Davies & Son, Inc., Los Angeles, Calif.
Electroloy Co., The, Inc., Bridgeport, Conn.
Eutectic Welding Alloys Co., Flushing, N. Y.
Ever-Tite Alloys Corp., New York, N. Y.
Hobart Bros. Co., The, Troy, Ohio
Krembs & Co., Chicago, Ill.
Link Welder Corp., Detroit, Mich.
National Cylinder Gas Co., Chicago, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Revere Copper & Brass, Inc., New York, N. Y.
Smith Bros. & Hughes, San Diego, Cal.
Trindl Prod., Ltd., Chicago, Ill.
Welding Equipment & Supply Co., Detroit, Mich.
Weldit, Inc., Detroit, Mich.

CUTTING ELECTRODES

All-State Welding Alloys Co., Inc., White Plains, N. Y.
American Agile Corp., Cleveland, Ohio
American Oxygen Service Corp., Harrison, N. J.
Arcair Co., Bremerton, Wash.
Arcos Corp., Philadelphia, Pa.
Eutectic Welding Alloys Corp., New York, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Hobart Bros. Co., The, Troy, Ohio
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Metal & Thermit Corp., N. Y. 17, N. Y.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Reid Avery Co., Dundalk, Baltimore, Md.
Trindl Prod., Ltd., Chicago, Ill.

ELECTRODE KITS

(See: "Arc Electrode Kits")

ELECTRODES, Rock Piercing, Cutting

Eutectic Welding Alloys Corp., Flushing, N. Y.

FLUXES, Submerged Arc

American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
Arcos Corp., Philadelphia, Pa.
Lincoln Electric Co., Cleveland, Ohio
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Sight-Feed Generator Co., West Alexandria, Ohio

HARDFACING ELECTRODES

Adams Alloy Co., Wakita, Okla.
Air Reduction Sales Co., New York, N. Y.
Allied Weldcraft, Inc., Indianapolis, Ind.
Alloy Rods Co., York, Pa.
American Chain & Cable Co., Inc., Page Steel & Wire Div., Monessen, Pa.
American Manganese Steel Div. of American Brake Shoe Co., Chicago Heights, Ill.
Ampco Metals, Inc., Milwaukee, Wis.
Armite Laboratories, Los Angeles, Calif.
Bingrod Co., Kalamazoo, Mich.
Callite Tungsten Corporation, Union City, N. J.
Canton Alloys, Inc., Canton, Ohio
Champion Rivet Co., The, Cleveland, Ohio
Chicago Hardware Foundry Co., North Chicago, Ill.
Cleveland Tungsten, Inc., Cleveland, Ohio
Coast Metals Inc., Little Ferry, N. J.
Crobalt, Inc., Ann Arbor, Mich.
Crucible Steel Co. of America, Pittsburgh, Pa.
Delloy Metals, Philadelphia, Pa.
Eutectic Welding Alloys Co., Flushing, N. Y.
Ever-Tite Alloys Corp., New York, N. Y.
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Haynes Stellite Co., Unit of Union Carbide & Carbon Corp., Kokomo, Ind.
Hobart Bros. Co., The, Troy, Ohio

More "Hardfacing Electrodes" *on page 36*

Rexarc

HARD-FACING AND MANGANESE ELECTRODES

GIVE YOU "ENGINEERED TOUGHNESS"

"Engineered Toughness" in Rexarc Electrodes means extra wear, longer resistance to shock, heavy impact and abrasion. Rexarc is economical, too. Fast, smooth running Rexarc costs less because you get more deposit per pound, minimum spatter loss. Write for leaflet.

HARD FACING Rexarc ELECTRODES

Rexarc is a Product of
THE SIGHT FEED GENERATOR COMPANY
West Alexandria, Ohio
U.S.A.

"Fuse-Well" ELECTRODES

"The Name to Specify When You Buy"

- "FUSE-WELL" No. 22 (Coated Machineable Electrode)
- "FUSE-WELL" No. 19 (Coated Hard-Surfacing Electrode)

Sold Thru Leading Distributors

Weld Rod Division

THE CHICAGO HARDWARE FOUNDRY CO.
NORTH CHICAGO, ILL.

Alloy Rods Company

WEAR-ARC • WEAR-FLAME

HARD-FACING ALLOYS

for Correction of Wear Patterns

Type of Application	Wear-Arc Correction Alloy	Type
For Build-Up on Carbon Steel parts subjected to severe impact, abrasion and compression	WEAR-ARC 3	AC-DC only
For Build-Up and High Strength Welding of Manganese and Carbon Steel parts subjected to severe impact, abrasion and compression	WEAR-ARC "SUPER WH"	AC-DC only
SEVERE IMPACT and ABRASION	WEAR-ARC 12	AC-DC only
SEVERE ABRASIVE WEAR	WEAR-ARC CHROME BORIDE	AC-DC only
HEAVY IMPACT, ABRASION and COMPRESSION	WEAR-ARC 6	AC-DC only
MEDIUM IMPACT and HIGH ABRASION RESISTANCE	WEAR-ARC 40 WEAR-FLAME 40	AC-DC or Acetylene
LIGHT IMPACT and SEVERE ABRASION	WEAR-ARC & WEAR-FLAME Tungsten Carbide	AC-DC or Acetylene
CORROSION and HEAT in CONNECTION with ABRASIVE WEAR	WEAR-ARC & WEAR-FLAME A or B	AC-DC or Acetylene

Find out how this complete line of wear and corrosion resistant alloys can solve your wear problems . . . write for BULLETIN AR 4.

Alloy Rods Co.

GENERAL OFFICES and PLANT
YORK 6, PENNSYLVANIA

Pacific Coast Sales Offices and Plant
El Segundo, Calif.

no finer electrodes made . . . anywhere

HARDFACING ELECTRODES

Industrial Overlay Metals, Inc., Eaton, Ohio
Lincoln Electric Co., The, Cleveland, Ohio
Liquid Carbonic Corp., The, Wall Chem. Div., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Maurath, Inc., Cleveland, Ohio
Metal & Thermit Corp., New York, N. Y.
McDonald Co., E. J., The, Reno, Nev.
McKay Co., Pittsburgh, Pa.
Mir-O-Col Alloy Co., Inc., Los Angeles, Calif.
National Cylinder Gas Co., Chicago, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Phillips, C. E., & Co., Detroit, Mich.
Purnell Alloy Co., Angleton, Texas.
Rankin Mfg. Co., Alhambra, Calif.
Reid-Avery Co., Dundalk, Baltimore, Md.
Resisto-loy Co., Grand Rapids, Mich.
Shober Sales, Inc., Stockton, Calif.
Sight Feed Generator Co., The, West Alexandria, Ohio
Smith Corp., A. O., Milwaukee, Wis.
Stoody, Co., Whittier, Calif.
Stulz-Sickles Co., Newark, N. J.
Victor Equipment Co., Los Angeles, Calif.
Wall Colmonoy Corp., Detroit, Mich.
Welding Equipment & Supply Co., Detroit, Mich.
Westinghouse Elec. Corp., Pittsburgh, Pa.

HEAT-RESISTING ELECTRODES

Air Reduction Sales Co., New York, N. Y.
Allegheny Ludlum Steel Corp., Brackenridge, Pa.
Allied Weld-Craft, Inc., Indianapolis, Ind.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
Alloy Rods Co., York, Pa.
American Manganese Steel Div. of American Brake Shoe Co., Chicago Heights, Ill.
Arcos Corp., Philadelphia, Pa.
Armite Laboratories, Los Angeles, Calif.
Cleveland Tungsten, Inc., Cleveland, Ohio
Coast Metals, Inc., Little Ferry, N. J.
Crucible Steel Co. of America, Pittsburgh, Pa.
Delloy Metals, Philadelphia, Pa.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Ever-Tite Alloys Corp., New York, N. Y.
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Haynes Stellite Co., Div. Union Carbide & Carbon Corp., Kokomo, Ind.
Hobart Bros. Co., The, Troy, Ohio
Industrial Overlay Metals, Inc., Eaton, Ohio
Johnson, A. P., Los Angeles, Calif.
MacDonald Co., Inc., Reno, Nevada
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Maurath, Inc., Cleveland, Ohio
McKay Co., Pittsburgh, Pa.
Metal & Thermit Corp., New York, N. Y.
Morris, Wheeler, & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Page Steel & Wire Div. of American Chain & Cable Co., Inc., Monessen, Pa.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Sight Feed Generator Co., The, W. Alexandria, Ohio
Smith, A. O. Corp., Milwaukee, Wis.
Stoody Co., Whittier, Calif.
Wall Colmonoy Corp., Detroit, Mich.
Welding Equip. & Supply Co., Detroit, Mich.
Westinghouse Electric Corp., Pittsburgh, Pa.

HIGH-TENSILE ELECTRODES

Air Reduction Sales Co., New York, N. Y.
Allied Weldcraft, Inc., Indianapolis, Ind.
Alloy Rods Co., York, Pa.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
Arcos Corp., Philadelphia, Pa.
Castle, A. M., & Co., Chicago, Ill.
Champion Rivet Co., The, Cleveland, Ohio
Crucible Steel Co. of America, Pittsburgh, Pa.
Eutectic Welding Alloys Corp., Flushing, N. Y.
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Haynes Stellite Co., Div. Union Carbide & Carbon Corp., Kokomo, Ind.
Hobart Bros. Co., The, Troy, Ohio
Lincoln Electric Co., The, Cleveland, Ohio.
Liquid Carbonic Corp., The, Wall Chem. Div., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
McKay Co., Pittsburgh, Pa.
Metal & Thermit Corp., New York, N. Y.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.

(Continued on next page)

HIGH-TENSILE ELECTRODES

(Continued from page 36)

Permalatem Welding Alloys, Inc., Red Bank, N. J.
Reid-Avery Co., Dundalk, Baltimore, Md.
Shober Sales, Inc., Stockton, Calif.
Smith, A. O., Corp., Milwaukee, Wis.
Standard Steel & Wire Co., Bolivar, Pa.
Trindl Products, Ltd., Chicago, Ill.
Universal Welder Corp., Cleveland, Ohio
Westinghouse Elec. Corp., Pittsburgh, Pa.

INERT GAS WELDING WIRE

Air Reduction Sales Co., New York, N. Y.
American Manganese Steel, Div. of American Brake Shoe Co., Chicago Heights, Ill.
Ampco Metal Inc., Milwaukee, Wis.
All-State Welding Alloys Co., White Plains, N. Y.
Aluminum Co. of America, Pittsburgh, Pa.
Arcos Corp., Philadelphia, Pa.
Auto-Arc-Weld Mfg. Co., Cleveland, Ohio
Collins-Edmonds, Inc., Philadelphia, Pa.
Drawalloy Corp., York, Pa.
Haynes Stellite Corp., Div. of Union Carbide & Carbon Corp., New York, N. Y.
Lincoln Electric Co., Cleveland, Ohio
Linde Air Prods. Co., Unit of Union Carbide & Carbon Corp., New York, N. Y.
McKay Co., The, Pittsburgh, Pa.
Metal & Thermit Corp., N. Y. 17, N. Y.
Morris Wheeler & Co., Philadelphia, Pa.
Pacific Welding Alloys Mfg., Los Angeles, Cal.
Page Steel & Wire, Div. of American Chain & Cable Inc., Monessen, Pa.
Reid-Avery Co., Baltimore, Md.
Sight Feed Generator, West Alexandria, Ohio
Standard Steel & Wire Co., Bolivar, Pa.
Stoody Co., Whittier, Cal.
Welding Alloys Mfg. Co., Newark, N. J.
Weldwire Co., Philadelphia, Pa.

LIME-FERRITIC ELECTRODES

(See: "Low Hydrogen Electrodes")

LOW-HYDROGEN ELECTRODES

Air Reduction Sales Co., New York, N. Y.
Alloy Rods Co., York, Pa.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
American Agile Corp., Bedford, Ohio
Arcos Corp., Philadelphia, Pa.
Champion Rivet Co., The, Cleveland, Ohio.
Crucible Steel Co. of America, New York, N. Y.

LINCOLN "JETWELD" ELECTRODES

SPEED WELDING 35% *AND MORE*

LINCOLN gives you the fastest hand welding electrodes ever made, with higher quality than ever before . . . by bringing powdered metallurgy into electrode design.

"JETWELD 1" Extra fast electrode for flat and horizontal fillets.

"JETWELD 2-HT" Extra fast electrode for flat position, deep groove joints and fillets in high tensile steels.

GET "JETWELD'S" COST-CUTTING FACTS

Write for Bulletin 481.

THE LINCOLN ELECTRIC COMPANY
Dept. 713, Cleveland 17, Ohio

Sales Offices and Field Service Shops in All Principal Cities

LINCOLN

Eutectic Welding Alloys Corp., Flushing 58, N. Y.
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Hobart Bros. Co., The, Troy, Ohio.
Lincoln Electric Co., Cleveland, Ohio.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
McKay Co., The, Pittsburgh, Pa.
Metal & Thermit Corp., New York, N. Y.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago, Ill.
North American Phillips Co., Inc., New York, N. Y.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Page Steel & Wire Div. of American Chain & Cable Co., Inc., Monessen, Pa.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Reid-Avery Co., Dundalk, Baltimore, Md.
Shober Sales, Inc., Stockton, Calif.
Smith Corp., A. O., Milwaukee, Wis.
Westinghouse Electric Corp., Pittsburgh, Pa.

MAGNETIC FLUX

American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
Auto Arc Weld Mfg. Co., Cleveland, Ohio
Sight Feed Generator Co., West Alexandria, Ohio
Stoody Co., Whittier, Calif.

MANGANESE ELECTRODES, 11-14%

Air Reduction Sales Co., New York, N. Y.
Allied-Weld-Craft, Inc., Indianapolis, Ind.
American Manganese Steel Div. of American Brake Shoe Co., Chicago Heights, Ill.
Central Steel & Wire Co., Chicago, Ill.
Champion Rivet Co., The, Cleveland, Ohio
Eutectic Welding Alloys Corp., Flushing, N. Y.
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Hobart Bros. Co., The, Troy, Ohio
Industrial Overlay Metals, Inc., Eaton, Ohio
Lincoln Electric Co., The, Cleveland, Ohio
Manganese Steel Forge Co., Philadelphia, Pa.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
McKay Co., Pittsburgh, Pa.
Metal & Thermit Corp., New York, N. Y.
Mir-O-Col Alloy Co., Inc., Los Angeles, Calif.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago, Ill.
National Welders Supply Co., Charlotte, N. C.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Reid-Avery Co., Baltimore, Md.
Sight-Feed Generator Co., West Alexandria, Ohio
Smith Corp., A. O., Milwaukee, Wis.
Standard Steel & Wire Co., Bolivar, Pa.
Stoody Co., Whittier, Cal.
Stulz-Sickles Co., Newark, N. J.

MANGANESE-BRONZE ELECTRODES

Allied Weld Craft, Inc., Indianapolis, Ind.
Alloy Rods Co., York, Pa.
American Brass Co., Waterbury, Conn.
Champion Rivet Co., The, Cleveland, Ohio.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Hobart Bros. Co., The, Troy, Ohio.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
National Cylinder Gas Co., Chicago, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles Calif.
Permalatem Welding Alloys, Inc., Red Bank, N. J

MILD-STEEL ELECTRODES

Air Reduction Sales Co., Div. Air Reduction Co., Inc., New York, N. Y.
Allied Weldcraft, Inc., Indianapolis, Ind.
Alloy Rods Co., York, Pa.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
Arcos Corp., Phila., Pa.
Armco Steel Corp., Middletown, Ohio.
Bernard Welding Equip. Co., Chicago, Ill.
Champion Rivet Co., The, Cleveland, Ohio.
Crucible Steel Co. of America, New York, N. Y.
Electric Arc, Inc., Newark, N. J.
Eutectic Welding Alloys Corp., Flushing, N. Y.
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Hobart Bros. Co., Troy, Ohio.
Lincoln Electric Co., The, Cleveland, Ohio
Liquid Carbonic Corp., The, Wall Chem. Div., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
McKay Co., Pittsburgh, Pa.
Metal & Thermit Corp., New York, N. Y.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Page Steel & Wire Div., American Chain & Cable Co., Monessen, Pa.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Reid-Avery Co., Dundalk, Baltimore, Md.
Shober Sales, Inc., Stockton, Calif.
Smith Corp., A. O., Milwaukee, Wis.
Standard Steel & Wire Co., Bolivar, Pa.
Westinghouse Electric Corp., Pittsburgh, Pa

(Continued on next page)

ALLOY RODS COMPANY

ATOM·ARC

The only All Position Iron Powder Low Hydrogen ELECTRODE

Available in these AWS Grades

7016
8016 N (3½% Ni.)
8016 CM (1¼% Cr., ½% Mo.)
9016 CM (2¼% Cr., 1% Mo.)
10016 MM (1.7% Mn., .4% Mo.)
12016 NMV (1.9% Ni., .9% Mo., .2% V.)

- **X-ray quality weld metal**
- **No starting porosity**
- **More pounds of weld metal per electrode used**
- **Outstanding physical properties**
- **Smooth, uniform weld bead in all positions**
- **No moisture pick up**

Write for BULLETIN AR-8

Alloy Rods Co.

General Offices and Plant
York 6, Pennsylvania

Pacific Coast Sales Offices and Plant
El Segundo, Calif.

no finer electrodes made . . . anywhere

Alloy Rods Company

ALLOY ARC WELDING
ELECTRODES

ARCALOY Stainless Steel Electrodes are available for all grades of chrome-nickel and straight chrome stainless steels with either AC-DC coating or lime coating. ARCALOY'S superior coatings produce a slag that is easily and completely removed. 3 out of 10 stainless steel welding electrodes consumed in the U.S.A. are made by Alloy Rods Company.
Write for BULLETIN AR-3.

NICKEL-ARC Electrodes—finest electrodes made for machinable welds on cast iron. Produce a smooth arc and spatter-free action with AC or DC . . . easy slag removal . . . easy-to-control arc . . . no injurious fumes . . . all position welding . . . smooth bead contour . . . no pre-heating required. Ideal for repairing broken or worn castings. Write for BULLETIN AR-2.

WEAR-ARC Hard-Facing Electrodes for fast, economical, and efficient rebuilding and hard-facing to resist abrasion, impact, corrosion and compression.
Write for BULLETIN AR-4.

WEAR-ARC "Super WH" Electrodes for strong, ductile welds on manganese steel. Outwears 14% manganese 4 to 1. For both attachment welding and hard-facing.
Write for BULLETIN AR-5.

BRONZE-ARC Mn *the first and only electrode for welding Manganese Bronze.* Welds without high preheating . . . without distortion and warpage. Reclaim and repair manganese bronze castings, fabricate manganese bronze assemblies with Bronze-Arc Mn.
Write for BULLETIN AR-7.

TOOL-ARC Tool and Die Electrodes for welding each of the five basic types of tool and die steels including: oil hardening, hot work, water hardening, high speed and air hardening . . . also work hardening applications.
Write for BULLETIN AR-6.

BRONZE-ARC C Electrodes for high strength, porosity-free welds in bronze, brass, copper, and to join dissimilar metals. Excellent physical properties for overlaying bearing surfaces on cast iron or steel. Write for BULLETIN 255.

ATOM-ARC *new* All-Position Iron Powder Low Hydrogen Electrode. X-ray quality weld metal—no starting porosity—outstanding physicals—no moisture pick-up. Available in alloy grades. Write for BULLETIN AR-8

OVEN FRESH ALLOY RODS COMPANY electrodes are packed in hermetically sealed metal containers.

Alloy Rods Co.

General Offices and Plant • York 6, Pa.
Pacific Coast Sales Offices and Plant, El Segundo, Calif.

ARCALOY Stainless Steel Electrodes
BRONZE-ARC Bronze Electrodes
NICKEL-ARC Electrodes for Cast Iron
TOOL-ARC Electrodes for Tools and Dies
WEAR-ARC Hard-Facing Electrodes
ATOM-ARC Low Hydrogen Electrodes

no finer electrodes made . . . anywhere

NICKEL ELECTRODES & NICKEL ALLOYS

Air Reduction Sales Co., New York, N. Y.
American Welding Alloys, Inc., Brooklyn, N. Y.
Arcos Corp., Philadelphia, Pa.
Champion Rivet Co., The, Cleveland, Ohio.
Eutectic Welding Alloys Corp., Flushing, N. Y.
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Haynes Stellite Co., New York, N. Y.
Hobart Bros. Co., Troy, Ohio
International Nickel Co., Inc., New York, N. Y.
Lincoln Electric Co., Cleveland, Ohio
Marquette Mfg. Co., Inc., Minneapolis, Minn.
McKay Co., The, Pittsburgh, Pa.
Metal & Thermit Corp., N. Y. 17, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Northeast Metals Co., Philadelphia, Pa.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Sight Feed Generator Co., The, West Alexandria, Ohio.
Smith Corp., A. O., Milwaukee, Wis.
Southern Oxygen Company, Bladensburg, Maryland
Welding Equipment & Supply Co., Detroit, Mich.

NICKEL MANGANESE ELECTRODES

Air Reduction Sales Co., Div. Air Reduction Co., Inc., New York, N. Y.
Allied Weld-Craft, Inc., Indianapolis, Ind.
Alloy Rods Co., York, Pa.
American Manganese Steel Div. of American Brake Shoe Co., Chicago Heights, Ill.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Haynes Stellite Co., New York, N. Y.
Hobart Bros. Co. The, Troy, Ohio.
Industrial Overlay Metals, Inc., Eaton, Ohio
Lincoln Electric Co., The, Cleveland, Ohio.
Mac Donald Co., Inc., Reno, Nevada
Manganese Steel Forge Co., Philadelphia, Pa.
Metal & Thermit Corp., New York, N. Y.
Mir-O-Col Alloy Co., Inc., Los Angeles, Calif.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago, Ill.
Rankin Mfg. Co., Alhambra, Calif.
Resisto-Loy Co., Grand Rapids, Mich.
Sight Feed Generator Co., West Alexandria, Ohio.
Stoody Co., Whittier Calif.
Stulz-Sickles Co., Newark, N. J.
Victor Equipment Co., Los Angeles, Calif.
Welding Service Sales, Inc., San Francisco, Calif.

POWDER-METAL ELECTRODES

Air Reduction Sales Co., New-York, N. Y.
Alloy Rods Co., York, Pa.
Champion Rivet Co., The, Cleveland, Ohio
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Hobart Bros. Co., Troy, Ohio
Lincoln Elect Co., The, Cleveland, Ohio
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Metal & Thermit Corp., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Smith, A. O., Corp., Milwaukee, Wis.
Westinghouse Electric Corp., Pittsburgh, Pa.

STAINLESS-STEEL ELECTRODES

Air Reduction Sales Co., Div. Air Reduction Co., Inc., New York, N. Y.
Allegheny Ludlum Steel Corp., Pittsburgh, Pa.
Alloy Rods Co., York, Pa.
All-State Welding Alloys Co., White Plains, N. Y.
Arcos Corp., Philadelphia, Pa.
Champion Rivet Co., The, Cleveland, Ohio.
Crucible Steel Co. of America, Pittsburgh, Pa.
Eutectic Welding Alloys Corp., Flushing, N. Y.
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Hobart Bros. Co., The, Troy, Ohio.
Industrial Overlay Metals, Inc., Eaton, Ohio
Johnston, A. P., Los Angeles, Calif.
Lincoln Electric Co., The, Cleveland, Ohio
Liquid Carbonic Corp., Wall Chemical Div., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Meurath, Inc., Cleveland, Ohio.
McKay Co., Pittsburgh, Pa.
Metal & Thermit Corp., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Page Steel & Wire Div., American Chain & Cable Co., Inc., Monessen, Pa.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Reid-Avery Co., Baltimore, Md.
Shaber Sales, Inc., Stockton, Calif.
Smith Corp., A. O., Milwaukee, Wis.
Westinghouse Electric Corp., Pittsburgh, Pa.

SUBMERGED ARC WELDING WIRE

Air Reduction Sales Co., New York, N. Y.
American Manganese Steel, Div. of American Brake Shoe Co., Chicago Heights, Ill.
Ampco Metal Inc., Milwaukee, Wis.
All-State Welding Alloys Co., White Plains, N. Y.
Arcos Corp., Philadelphia, Pa.
Auto-Arc-Weld Mfg. Co., Cleveland, Ohio
Drawalloy Corp., York, Pa.
Haynes Stellite Corp., Div. of Union Carbide & Carbon Corp., New York, N. Y.
Lincoln Electric Co., Cleveland, Ohio
Linde Air Prods. Co., Unit of Union Carbide & Carbon Corp., New York, N. Y.
McKay Co., The, Pittsburgh, Pa.
Metal & Thermit Corp., N. Y. 17, N. Y.
Mir-o-col Alloy Co., Inc., Los Angeles, Cal.
Morris Wheeler & Co., Philadelphia, Pa.
Pacific Welding Alloys Mfg., Los Angeles, Cal.
Page Steel & Wire, Div. of American Chain & Cable Inc., Monessen, Pa.
Reid-Avery Co., Baltimore, Md.
Sight Feed Generator, West Alexandria, Ohio
Standard Steel & Wire Co., Bolivar, Pa.
Stoody Co., Whittier, Cal.
Weldwire Co., Philadelphia, Pa.

TOOL and DIE ELECTRODES

Allegheny Ludlum Steel Corp., Pittsburgh, Pa.
Allied Weld-Craft, Inc., Indianapolis, Ind.
Alloy Rods Co., York, Pa.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
Ampco Metal, Inc., Milwaukee, Wis.
Crucible Steel Co. of America, Pittsburgh, Pa.
Eutectic Welding Alloys Co., Flushing, N. Y.
Fansteel Metallurgical Corp., North Chicago, Ill.
Harnischfeger Corp., Milwaukee, Wis.
Hobart Bros. Co., The, Troy, Ohio.
Industrial Overlay Metals, Eaton, Ohio
Lincoln Electric Co., The, Cleveland, Ohio.
Marquette Mfg., Co., Minneapolis, Minn.
Maurath, Inc., Cleveland, Ohio.
McKay Co., Pittsburgh, Pa.
Metal & Thermit Corp., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Rankin Mfg. Co., Los Angeles, Calif.
Reid-Avery Co., Dundalk, Baltimore, Md.
Resisto-Loy Company, Grand Rapids, Mich.
Smith Corp., A. O., Milwaukee, Wis.
Victor Equipment Co., San Francisco, Calif.
Welding Equipment & Supply Co., Detroit, Mich.
Westinghouse Electric Corp., Pittsburgh, Pa.

TUNGSTEN CARBIDE ELECTRODES

Air Reduction Sales Co., Div. Air Reduction Co., Inc., New York, N. Y.
Alloy Rods Co., York, Pa.
American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
Armite Laboratories, Los Angeles, Calif.
Haynes Stellite Co., Unit of Union Carbide & Carbon Corp., Kokomo, Ind.
Industrial Overlay Metals, Inc., Eaton, Ohio
Lincoln Electric Co., Cleveland, Ohio.
MacDonald Co., Inc., Reno, Nev.
Mir-O-Col Alloy Co., Inc., Los Angeles, Calif.
Purnell Alloy Co., Angleton, Texas
Rankin Mfg. Co., Alhambra, Calif.
Sight Feed Generator Co., The, West Alexandria, Ohio.
Stoody Co., Whittier, Calif.
Victor Equipment Co., San Francisco, Calif.

TUNGSTEN ELECTRODES

Cleveland Tungsten, Inc., Cleveland, Ohio.
Fansteel Metallurgical Corp., Detroit, Mich.
General Electric Co., Schenectady, N. Y.
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
North American Philips Co., Inc., Elmet Div., Lewiston, Me.
Sylvania Elect. Prod. Inc., Towanda, Pa.
Westinghouse Elec. Corp., Pittsburgh, Pa.
WW Alloy Inc., Div. of Fansteel Metallurgical Corp., Detroit, Mich.

UNDERWATER CUTTING ELECTRODES

(See: "Welding and Cutting Equipment, Underwater")

UNDERWATER WELDING ELECTRODES

Arcos Corp., Philadelphia, Pa.
Craftsweld Equipment Corp., Long Island City, N. Y.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Metal & Thermit Corp., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Reid-Avery Co., Baltimore, Md.

Gas Processes

ALLOYS, BRAZING

(See: "Brazing Alloys")

ALLOYS, Hardfacing

(See "Hardfacing Electrodes" or "Hardfacing Welding Rods")

ALLOYS, Silver Brazing

(See: "Silver Brazing Alloys")

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Allen, L. B. Co., Inc., Chicago, Ill.
All-State Welding Alloys Co., White Plains, N. Y.
Aluminum Co. of America, Pittsburgh, Pa.
American Products Corp., Chicago, Ill.
American Solder & Flux Co., Philadelphia, Pa.
Anti-Borax Compound Co., Inc., Ft. Wayne, Ind.
Belmont Smelting & Refining Works, Inc., Brooklyn, N. Y.
Burdett Oxygen Co., Cleveland, Ohio
Champion Rivet Co., Cleveland, Ohio.
Chicago Hardware Foundry Co., North Chicago, Ill.
Childs Aluminum Solder Co., New York, N. Y.
Craftsweld Equip. Corp., Long Island City, N. Y.
Division Lead Co., Summit, Ill.
Dow Chemical Corp., Midland, Mich.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Farrelloy Co., Philadelphia, Pa.
Flux-All Chemical Prod., New York, N. Y.
Fusion Engineering Co., Cleveland, Ohio.
Johnson Gas Appliance Co., Cedar Rapids, Iowa
Johnson Mfg. Co., Mount Vernon, Iowa
K-G Equipment Co., Allentown, Pa.
Krembs and Co., Chicago, Ill.
Krieg, Chas. W., Co., Newark, N. J.
Lake Chemical Co., Chicago, Ill.
Liquid Carbonic Corp., The, Chicago, Ill.
Marquette Mfg. Co., Minneapolis, Minn.
Mauk, A. K., Pittsburgh, Pa.
Metal Bond Mfg. Co., Montgomery City, Mo.
Metalloy Prod. Co., Los Angeles, Calif.
Morey Flux & Chem. Co., Wilmington, Del.
Morgan Aluminum Welding Rod Co., Cleveland, Ohio
National Cylinder Gas Co., Chicago, Ill.
Northeast Metals Co., Philadelphia, Pa.
Ohmer, George H., Dayton, Ohio
Pal-Weld Mfg. Co., Seattle, Wash.
Permalatem Welding Alloys Co., Neptune, N. J.
Sierra Welding Flux Co., Temple City, Calif.
Sight Feed Generator Co., West Alexandria, Ohio
Smith Welding Equipment Corp., Minneapolis, Minn.
Special Chemicals Corp., New York, N. Y.
Superior Flux & Mfg. Co., Cleveland, Ohio
Victor Equipment Co., San Francisco, Calif.
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Air Reduction Sales Co., New York, N. Y.
Allied Weld-Craft, Inc., Indianapolis, Ind.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
American Brass Co., Waterbury, Conn.
American Welding Alloys Corp., Brooklyn, N. Y.
Ampco Metal, Inc., Milwaukee, Wis.
Bridgeport Brass Co., Bridgeport, Conn.
Chicago Hardware Foundry Co., Chicago, Ill.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Imperial Brass Mfg. Co., Chicago, Ill.
Linde Air Products Company, a unit of Union Carbide and Carbon Corp., New York 17, N. Y.
Marquette Mfg. Co., Minneapolis, Minn.
Metal & Thermit Corp., New York, N. Y.
Morgan Aluminum Welding Rod Co., Cleveland, Ohio
National Cylinder Gas Co., Chicago, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
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Ohmer, George H., Dayton, Ohio
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Smith Welding Equipment Corp., Minneapolis, Minn.
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White Metal Rolling & Stamping Corp., Brooklyn, N. Y.

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Air Reduction Sales Co., New York, N. Y.
Al-Rod Co., The, San Bernardino, Calif.
Aladdin Rod & Flux Mfg. Co., Grand Rapids, Mich.
Allied Weld-Craft, Inc., Indianapolis, Ind.
All State Welding Alloys Co., Inc., White Plains, N. Y.
Aluminum Co. of America, Pittsburgh, Pa.
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American Brass Co., The, Waterbury, Conn.
American Wire Products Co., Inc., Glastonbury, Conn.
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Ever-Tite Alloys Corp., New York, N. Y.
Hobart Bros. Co., Troy, Ohio
Imperial Brass Mfg. Co., Chicago, Ill.
Linde Air Products Co., The, Unit of Carbide & Carbon Corp., New York, N. Y.
Liquid Carbonic Corp., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Modern Engineering Co., Inc., St. Louis, Mo.
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Reid-Avery Co., Baltimore, Md.
Sightmaster Corp., New Rochelle, N. Y.
Standard Electrodes & Mfg. Corp., Philadelphia, Pa.
Superior Oxy-Acetylene Mach. Co., Hamilton, Ohio
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American Welding Alloys, Inc., Brooklyn, N. Y.
Belmont Smelting & Refining Works, Inc., Brooklyn, N. Y.
Division Lead Co., Summit, Ill.
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Eutectic Welding Alloys Co., Flushing, N. Y.
Farrelloy Co., Philadelphia, Pa.
Flux-All Chemical Products, New York, N. Y.
Fusion Engineering Co., Cleveland, Ohio
Galv-Weld Products, Dayton, Ohio
Gardiner Metal Co., Chicago, Ill.
Kester Solder Co., Chicago, Ill.
Kirk, Morris P., & Son, Inc., Los Angeles, Calif.
Metal Bond Mfg. Co., St. Louis, Mo.
Metalloy Prod. Co., Los Angeles, Calif.
National Bearing Metals Corp., St. Louis, Mo.
National Lead Co., New York, N. Y.
Swiss Laboratory, Cleveland, Ohio
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American Welding Alloys Corp., Brooklyn, N. Y.
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Craftsweld Equip. Corp., Long Island City, N. Y.
Dockson Corp., Detroit, Mich.
Eutectic Welding Alloys Co., Flushing, N. Y.
Farrelloy Co., Philadelphia, Pa.
F. R. Faulk Equipment Sales, Pittsburgh, Pa.
Flux-All Chemical Products, New York, N. Y.
Gasflux Co., The, Mansfield, Ohio
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Handy & Harman, New York, N. Y.
Harris Calorific Co., Cleveland, Ohio
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Johnson Mfg. Co., Inc., Mt. Vernon, Iowa
K-G Equipment Co., Allentown, Pa.
Klem Chemical Works, Detroit, Mich.
Krembs & Co., Chicago, Ill.
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Liquid Carbonic Corp., The, Chicago, Ill.
Mallory, P. R., & Co., Inc., Indianapolis, Ind.
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Modern Engineering Co., Inc., St. Louis, Mo.
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National Cylinder Gas Co., Chicago 11, Ill.
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Northeast Metals Co., Philadelphia, Pa.
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American Platinum Works, The, Newark, N. J.
American Products Corp., Chicago, Ill.
American Silver Co., Flushing, N. Y.
American Solder & Flux Co., Philadelphia, Pa.
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Cleveland Precision Ring & Products Co., Cleveland, Ohio
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Industrial Overlay Metals, Inc., Chicago, Ill.
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Krieg, Chas. W. Co., Newark, N. J.
Liquid Carbonic Corp., Chicago, Ill.
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Makepeace Co., D. E., Div. Union Plate & Wire Co., Attleboro, Mass.
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National Cylinder Gas Co., Chicago, Ill.
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Permalatem Welding Alloys Co., Red Bank, N. J.
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Steel Sales Corp., Chicago, Ill.
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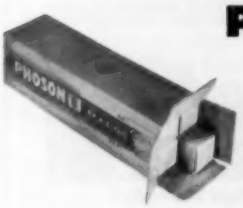

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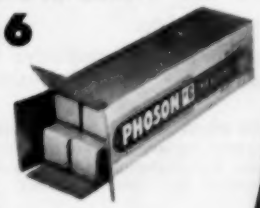

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American Oxygen Service Corp., Harrison, N. J.
American Platinum Works, The, Newark, N. J.
American Silver Co., Inc., Flushing, N. Y.
American Welding Alloys Corp., Brooklyn, N. Y.
Belmont Smelting & Refining Works, Inc., Brooklyn, N. Y.
Cleveland Precision Ring & Products Co., Cleveland, Ohio
Eutectic Welding Alloys Corp., Flushing, N. Y.
Handy & Harman, New York, N. Y.
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Allen, L. B., Co., Chicago, Ill.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
American Chemical & Flux Co., Brooklyn, N. Y.
American Platinum Works, The, Newark, N. J.
American Products Corp., Chicago, Ill.
American Silver Co., Inc., Flushing, N. Y.
American Solder & Flux Co., Philadelphia, Pa.
Anti-Borax Compound Co., Inc., Ft. Wayne, Ind.
Belmont Smelting & Refining Works, Inc., Brooklyn, N. Y.
Childs Aluminum Solder Co., New York, N. Y.
Cleveland Precision Ring & Products Co., Cleveland, Ohio
Craftsweld Equipment Corp., Long Island City, N. Y.
Eutectic Welding Alloys Corp., Flushing, N. Y.
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Handy & Harman, New York, N. Y.
Johnson Gas Appliance Co., Cedar Rapids, Iowa
Johnson Mfg. Co., Mount Vernon, Iowa
Krembs & Co., Chicago, Ill.
Lake Chemical Co., Chicago, Ill.
Liquid Carbonic Corp., The, Chicago, Ill.
Mallory, P. R., & Co., Inc., Indianapolis, Ind.
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Ohmer, George H., Dayton, Ohio
Permalatem Welding Alloys Co., Red Bank, N. J.
Sherman & Co., Flushing, N. Y.
Special Chemicals Corp., New York, N. Y.
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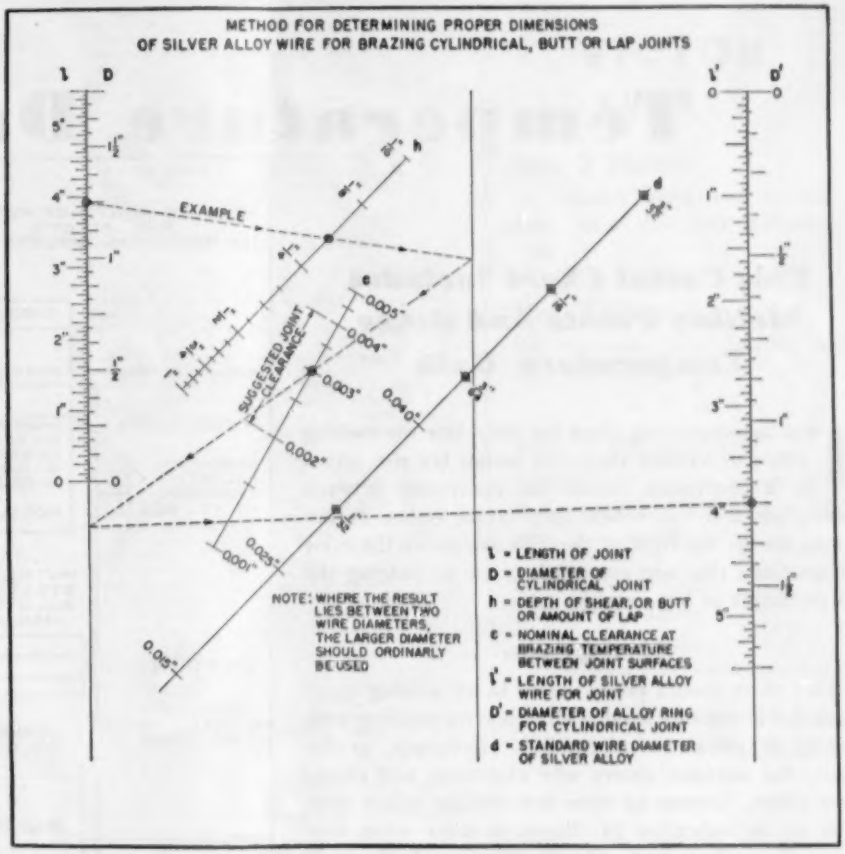
Aluminum Co. of America, Pittsburgh, Pa.
American Brass Co., Waterbury, Conn.
American Chain & Cable Co., Inc., Page Steel & Wire Div., Monessen, Pa.
American Welding Alloys Corp., Brooklyn, N. Y.
American Wire Products Co., Glastonbury, Conn.
Bridgeport Brass Co., Bridgeport, Conn.
Burdett Oxygen Co., Cleveland, Ohio

(Continued on page 43)

How to figure diameter or length of brazing wire



THE accompanying nomograph is a guide for selecting the proper alloy wire size for brazing tubular or linear joints of given specifications. This procedure applies to screw machine and other machined parts in which nominal tolerances are maintained fairly closely.

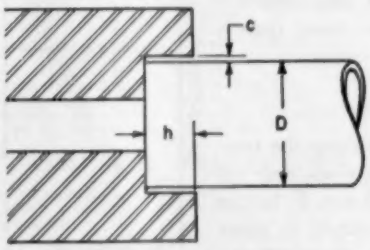
This nomograph can be used in two ways.

It can indicate the *wire diameter* needed to silver braze a joint whose diameter (or length), shear depth (or lap), and clearance are known. The chart is constructed to include allowances for normal machining tolerances and variations in workers' brazing techniques.

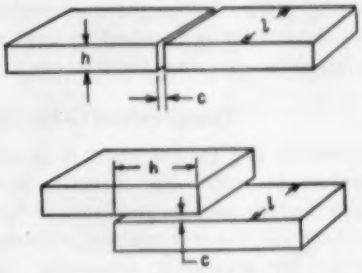
In the example illustrated, the problem is to find the proper wire diameter for a silver alloy ring to braze a cylindrical joint having these dimensions: diameter, 1¼ in.; shear depth, 3/16 in.; clearance, 0.003 in.

Starting on the left axis of the chart, extend a line from the joint diameter (1¼ in.) on the *D* scale through the shear depth (3/16 in.) on the *h* scale to intersect the center axis. From this point run the line back through the clearance (0.003 in.) on the *c* scale to intersect the left-hand axis. Line up this point with the required ring diameter (1¼ in.) on the *D'* scale.

The point where this line crosses the *d* scale, indicates that the wire diameter should be 1/32 in. When the result lies between two wire sizes, the larger diameter normally should be selected.



CYLINDRICAL JOINT



LINEAR JOINTS

Second, the nomograph may be used to determine the *length* of wire needed to make a joint if a given wire gage is already available. For example, suppose you must braze with hand-fed alloy a 3-in. linear joint, with a ½-in. lap and 0.001 clearance.

Assuming you already have 3/64-in. wire available, you can easily determine the minimum length of this wire needed per joint. From the intersecting point on the left-hand axis (found by using the *l*, *h*, and *c* scales), extend a line through the 3/64-in. mark on the *d* scale to the *l'* scale. The intersection on the *l'* scale indicates that for 3/64-in. wire, a 1⅛-in. length would provide the proper volume of silver alloy to fill the joint.

Multiplying the required length per joint by the number of joints to be brazed will give an approximate total amount of wire needed for an entire production run.

—Courtesy Handy & Harman

Temperature Data*

This Useful Chart Includes Melting Points And Other Temperature Data

THE accompanying chart not only lists the melting points of various alloys and metals but also serves as a convenient means for conversion between Centigrade and Fahrenheit temperature scales. In addition, on the far right of the scale are shown the color designations that are commonly used in judging the temperatures of hot metal by color.

Melting Points

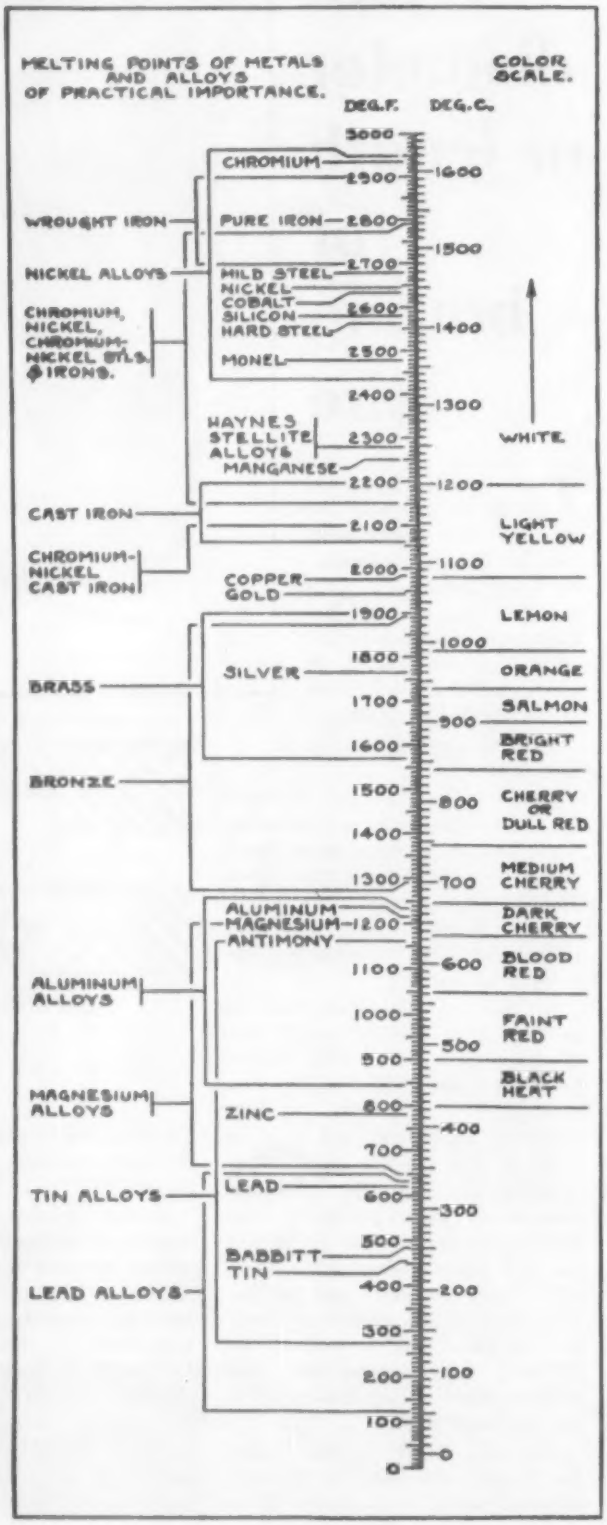
This chart should prove useful to all welding operators for it contains basic information on working with metals at elevated temperatures. Reference to the chart, for instance, shows why aluminum and aluminum alloys, because of their low melting points, give little or no indication by change in color when they approach welding heat. On the other hand, the high melting point of wrought iron explains why considerably more heat is required to weld this metal than is required for cast iron, for instance.

Temperature Color Scale

Another use for the chart is in estimating the temperature by color. For instance, instructions may require that the part be preheated to 1,100 deg. F. before welding. If you are without a thermocouple or other means for accurately measuring high temperatures, reference to the chart shows that the part, at 1,100 deg. F. would have a blood-red color. With a little experience, you can estimate this fairly closely by eye. In this connection, it should be mentioned that the color scale is for observations made in a fairly dark place and without welding goggles. As the light increases, the color groups on the scale will apply to higher temperatures.

Conversion Data

Finally, the chart is a ready means for converting Fahrenheit to Centigrade, and vice versa. Suppose you are familiar with the Fahrenheit scale, yet instructions call for the quenching of a welded part from 900 deg. C. Reference to the chart shows this to be approximately 1,650 deg. F.



*Reprinted from *Oxy-Acetylene Tips*, February, 1942

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(Continued from page 42)

Eastern Equip. Co., Inc., Willow Grove, Pa.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Krembs & Co., Chicago, Ill.
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Liquid Carbonic Corp., Chicago, Ill.
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Metal & Thermit Corp., N. Y. 17, N. Y.
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Mueller Brass Co., Port Huron, Mich.
National Cylinder Gas Co., Chicago 11, Ill.
Permalatem Welding Alloys Co., Red Bank, N. J.
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Revere Copper & Brass, Inc., New York, N. Y.
Titan Metal Mfg. Co., Bellefonte, Pa.
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Ampco Metal, Inc., Milwaukee, Wis.
Bridgeport Brass Co., Bridgeport, Conn.
Burdett Oxygen Co., Cleveland, Ohio
Central Steel & Wire Co., Chicago, Ill.
Chase Brass & Copper Co., Waterbury, Conn.
Drawalloy Corp., York, Pa.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Eutectic Welding Alloys Co., Flushing, N. Y.
Imperial Brass Mfg. Co., Chicago, Ill.
Johnston A. P., Los Angeles, Calif.
Krembs & Co., Chicago, Ill.
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Liquid Carbonic Corp., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
McCauley Alloy Sales Co., Chicago, Ill.
Metro Mfg. Co., Long Island City, N. Y.
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Morgan Aluminum Welding Rod Co., Cleveland, Ohio
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Mueller Brass Co., Port Huron, Mich.
National Cylinder Gas Co., Chicago 11, Ill.
National Welding Equipment Co., San Francisco, Calif.
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Phosphor Bronze Corp., The, Seymour, Conn.
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Seymour Mfg. Co., The, Seymour, Conn.
Sight Feed Generator Co., The, Richmond, Ind.
Superior Oxy-Acetylene Mach. Co., Hamilton, Ohio
Titan Metal Mfg. Co., Bellefonte, Pa.
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Welding Alloys Mfg. Co., Newark, N. J.
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American Oxygen Service Corp., Harrison, N. J.
American Products Corp., Chicago, Ill.
American Solder & Flux Co., Philadelphia, Pa.
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Columbia Chemical Products Co., Detroit, Mich.
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Croton Chemical Corp., New York, N. Y.
Dockson Corp., Detroit, Mich.
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Farrelloy Co., Philadelphia, Pa.
F. R. Faulk Equipment Sales, Pittsburgh, Pa.
Fusion Engineering Co., Cleveland, Ohio
General Welding & Equip. Co., Boston, Mass.
Harris Calorific Co., Cleveland, Ohio
Johnson Mfg. Co., Mount Vernon, Iowa
K-G Equipment Co., Allentown, Pa.
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Krembs and Co., Chicago, Ill.
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Liquid Carbonic Corp., The, Chicago, Ill.
Marquette Mfg. Co., Minneapolis, Minn.
Metal Bond Mfg. Co., St. Louis, Mo.
Modern Engineering Co., Inc., St. Louis, Mo.
Morey Flux & Chem. Co., Wilmington, Del.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago 11, Ill.
National Welding Equipment Co., San Francisco, Calif.
Northeast Metals Co., Philadelphia, Pa.
Ohmer, George H., Dayton, Ohio
Pel-Weld Mfg. Co., Seattle, Wash.
Permalatem Welding Alloys Co., Neptune, N. J.
Peterson Welding Lab., Kansas City, Mo.
Phillips, C. E., & Co., Detroit, Mich.
Sight Feed Generator Co., West Alexandria, Ohio
Smith Welding Equipment Corp., Minneapolis, Minn.
Special Chemicals Co., New York, N. Y.
Superior Flux & Mfg. Co., Cleveland, Ohio
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Welding Equipment & Supply Co., Detroit, Mich.
York Engineering Co., Chicago, Ill.

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Atlas Foundry Co., Irvington, N. J.
Bierman-Everett Foundry Co., Irvington, N. J.
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Chicago Hardware Foundry Co., The, North Chicago, Ill.
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Eutectic Welding Alloys Co., Flushing, N. Y.
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Liquid Carbonic Corp., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
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National Cylinder Gas Co., Chicago 11, Ill.
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Permalatem Welding Alloys Co., Red Bank, N. J.
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Uniworld Research Corp. of America, Cleveland Ohio
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Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Mueller Brass Co., Port Huron, Mich.
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Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Permalatem Welding Alloys Co., Red Bank, N. J.
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Flux-All Chemical Products, New York, N. Y.
Kester Solder Co., Chicago, Ill.
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(See: "Hardfacing Electrodes," "Hardfacing Welding Rods")

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Ampco Metal, Inc., Milwaukee, Wis.
Armite Laboratories, Los Angeles, Calif.
Bingrod Co., Kalamazoo, Mich.
Canton Alloys, Inc., Canton, Ohio
Chicago Hardware Foundry Co., North Chicago, Ill.
Coast Metals, Inc., Little Ferry, N. J.
Crobalt Inc., Ann Arbor, Mich.
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Delloy Metals, Philadelphia, Pa.
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Eutectic Welding Alloys Co., Flushing, N. Y.
Gorham Tool Co., Detroit, Mich.
Haynes Stellite Co., Unit of Union Carbide & Carbon Corp., Kokomo, Ind.
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Kerkling Metals Co., C. A., Hollywood, Calif.
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Liquid Carbonic Corp., Chicago, Ill.
MacDonald Co., Inc., The, Reno, Nev.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
McCauley Alloy Sales Co., Chicago, Ill.
Mir-O-Cal Alloy Co., Inc., Los Angeles, Calif.
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Purnell Alloy Co., Angleton, Texas
Rankin Mfg. Co., Alhambra, Calif.
Resisto-Loy Co., Grand Rapids, Mich.
Sight Feed Generator Co., The, W. Alexandria, Ohio
Standard Steel & Wire Co., Bolivar, Pa.
Stoody Co., Whittier, Calif.
Uniworld Research Corp. of America, Cleveland, Ohio
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Liquid Carbonic Corp., The, Chicago, Ill.
Marquette Mfg. Co., Minneapolis, Minn.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago 11, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Page Steel & Wire Division of American Chain & Cable Co., Inc., Monessen, Pa.
Permalatem Welding Alloys Co., Red Bank, N. J.
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National Cylinder Gas Co., Chicago, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
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(See: "Aluminum Fluxes")

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Chase Brass & Copper Co., Waterbury, Conn.
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Liquid Carbonic Corp., The, Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
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Standard Steel & Wire Co., Bolivar, Pa.
United Wire & Supply Corp., Cranston, R. I.
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Burdett Oxygen Co., Cleveland, Ohio
Central Steel & Wire Co., Chicago, Ill.
Chicago Steel & Wire Co., Chicago, Ill.
Crucible Steel Co. of America, New York, N. Y.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Liquid Carbonic Corp., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
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Metal & Thermit Corp., N. Y. 17, N. Y.
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National Cylinder Gas Co., Chicago 11, Ill.
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Page Steel & Wire, Div. American Chain & Cable Co., Inc., Monessen, Pa.
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Bridgeport Brass Co., Bridgeport, Conn.
Crucible Steel Co. of Amer., Pittsburgh, Pa.
Eutectic Welding Alloys Corp., Flushing, N. Y.
International Nickel Co., Inc., New York, N. Y.
Marquette Mfg. Co., Minneapolis, Minn.
Modern Engineering Co., Inc., St. Louis, Mo.
National Cylinder Gas Co., Chicago 11, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Permalatem Welding Alloys Co., Red Bank, N. J.
Reid-Avery Co., Dundalk, Baltimore, Md.
Victor Equipment Co., San Francisco, Calif.

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(Continued on next page)

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(Continued from page 45)

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Metal & Thermit Corp., N. Y. 17, N. Y.
Modern Engineering Co., Inc., St. Louis, Mo.
National Cylinder Gas Co., Chicago, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Permalatem Welding Alloys Co., Neptune, N. J.
Sight Feed Generator Co., West Alexandria, Ohio
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Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
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Reid-Avery Co., Baltimore, Md.
Sight Feed Generator Co., The, W. Alexandria, Ohio
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Belmont Smelting Refining Wks., Inc., Brooklyn, N.Y.
Eutectic Welding Alloys Corp., Flushing 58, N. Y.
Fusion Engineering Co., Cleveland, Ohio
Goldsmith Bros. Smelting & Refining Co., Chicago, Ill.
Handy & Harman, N. Y., N. Y.
Pacific Welding Alloys Corp., Los Angeles, Calif.
Permalatem Welding Alloys, Inc., Red Bank, N. J.
Steel Sales Corp., Chicago, Ill.

RODS, Welding

(See: "Welding Rods, Aluminum, Brazing Bronze, Cast Iron, Etc.")

RINGS, Brazing Alloys

(See: "Brazing Alloy Rings")

SOLDER, Brazing

(See: "Brazing Alloys")

SOLDER, Hard

(See: "Brazing Alloys")

SOLDER, Silver

(See: "Brazing Alloys")

SOLDERING FLUX—Paste, Stick and Liquid

Allen, L. B., Co., Inc., Chicago, Ill.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
Alpha Metals, Inc., Brooklyn, N. Y.
Aluminum Co. of America, Pittsburgh, Pa.
American Silver Co., Inc., Flushing, N. Y.
American Solder & Flux Co., Philadelphia, Pa.
American Welding Alloys Corp., Brooklyn, N. Y.
Belmont Smelting & Refining Works, Inc., Brooklyn, N. Y.
Best Effect Chemical Co., Hackensack, N. J.
Burdett Oxygen Co., Cleveland, Ohio
Chicago Hardware Foundry Co., No. Chicago, Ill.
Diener, Geo. W., Mfg. Co., Chicago, Ill.
Division Lead Co., Summit, Ill.
du Pont, E. I., de Nemours & Co., Inc., Wilmington, Dela.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Farrelloy Co., Philadelphia, Pa.
Flux-All Chemical Prod., New York, N. Y.
Fusion Engineering Co., Cleveland, Ohio
Gardiner Metal Co., Chicago, Ill.
Gasflux Co., Mansfield, Ohio
Hercules Chemical Co., Inc., New York, N. Y.
Johnson Gas Appliance Co., Cedar Rapids, Iowa
Johnson Mfg. Co., Mount Vernon, Iowa
Kester Solder Co., Chicago, Ill.
Kirk, Morris P., & Son, Inc., Los Angeles, Calif.
Klem Chemicals, Inc., Dearborn, Mich.
Krembs & Co., Chicago, Ill.
Lake Chemical Co., Chicago, Ill.
Liquid Carbonic Corp., The, Chicago, Ill.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Lead Co., New York, N. Y.
Ohio Carbon Co., The, Cleveland, Ohio
Ohmer, George H., Dayton, Ohio.
Pal-Weld Mfg. Co., Seattle, Wash.
Permalatem Welding Alloys Co., Neptune, N. J.
Puritan Compressed Gas Corp., Kansas City, Mo.
Ruby Chemical Co., The, Columbus, Ohio (Paste & Liquid only).
Sight Feed Generator Co., West Alexandria, Ohio
Superior Flux Mfg. Co., Cleveland, Ohio.
Swiss Laboratory, Cleveland, Ohio.
Wayne Chemical Products Co., Detroit, Mich.
Welding Equipment & Supply Co., Detroit, Mich.

STAINLESS-STEEL FLUXES

All-State Welding Alloys Co., Inc., White Plains, N. Y.
Air Reduction Sales Co., New York, N. Y.
Allen, L. B., Co., Chicago, Ill.
American Chemical & Flux Co., Brooklyn, N. Y.
American Products Corp., Chicago, Ill.
American Silver Co., Inc., Flushing, N. Y.
American Solder & Flux Co., Philadelphia, Pa.
American Welding Alloys Corp., Brooklyn, N. Y.
Andco, Inc., Orchard Park, N. Y.
Anti-Borax Compound Co., Inc., Ft. Wayne, Ind.
Arcos Corp., Phila., Pa.
Belmont Smelting & Refining Works, Inc., Brooklyn, N. Y.
Burdett Oxygen Co., The, Cleveland, Ohio
Cleveland Precision Ring & Products Co., Cleveland, Ohio
Croton Chemical Corp., New York, N. Y.
Dockson Corp., Detroit, Mich.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Flux-All Chemical Products, New York, N. Y.
Gasflux Co., The, Mansfield, Ohio
Johnson Gas Appliance Co., Cedar Rapids, Iowa
Johnson Mfg. Co., Mt. Vernon, Iowa
Kester Solder Co., Chicago, Ill.
Kirk, Morris P., & Son, Inc., Los Angeles, Calif.
Klem Chemicals, Inc., Dearborn, Mich.
Krembs & Co., Chicago, Ill.
Liquid Carbonic Corp., The, Chicago, Ill.
Morey Flux & Chem. Co., Wilmington, Del.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago, Ill.
Ohmer, George H., Dayton, Ohio
Permalatem Welding Alloys Co., Red Bank, N. J.
Ruby Chemical Co., The, Columbus, Ohio
Sherman & Co., Flushing, N. Y.
Sierra Welding Flux Co., Temple City, Calif.
Solar Aircraft Co., San Diego, Calif.
Special Chemicals Corp., New York, N. Y.
Superior Flux & Mfg. Co., Cleveland, Ohio
United Wire & Supply Corp., Providence, R. I.
Victor Equipment Co., San Francisco, Calif.
Weldit, Inc., Detroit, Mich.
York Engineering Co., Chicago, Ill.

STAINLESS STEEL WELDING RODS

Air Reduction Sales Co., New York, N. Y.
Allegheny Ludlum Steel Corp., Pittsburgh, Pa.
Allied Weldcraft, Inc., Indianapolis, Ind.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
Arcos Corp., Phila., Pa.
Carpenter Steel Co., The, Reading, Pa.
Central Steel & Wire Co., Chicago, Ill.
Crucible Steel Co. of America, Pittsburgh, Pa.
Drawalloy Corp., York, Pa.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Johnston, A. P., Los Angeles, Calif.
Krembs & Co., Chicago, Ill.
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Liquid Carbonic Corp., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
McCauley Alloy Sales Co., Chicago, Ill.
National Cylinder Gas Co., Chicago 11, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Page Steel & Wire Div., American Chain & Cable Co., Inc., Monessen, Pa.
Permalatem Welding Alloys Co., Red Bank, N. J.
Reid-Avery Co., Baltimore, Md.
Republic Steel Corp., Cleveland, Ohio
Shober Sales, Inc., Stockton, Calif.
Smith Corp., A. O., Milwaukee, Wis.
Victor Equipment Co., San Francisco, Calif.

TOOL and DIE WELDING RODS

Allied Weldcraft, Inc., Indianapolis, Ind.
Alloy Rods Co., York, Pa.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
Ampco Metal Co., Milwaukee, Wis.
Carpenter Steel Co., The, Reading, Pa.
Coast Metals, Inc., Little Ferry, N. J.
Crucible Steel Co. of America, Pittsburgh, Pa.
Drawalloy Corp., York, Pa.
Eutectic Welding Alloys Co., Flushing, N. Y.
Ever-Tite Alloys Corp., New York, N. Y.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Modern Engineering Co., Inc., St. Louis, Mo.
National Cylinder Gas Co., Chicago 11, Ill.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Permalatem Welding Alloys Co., Red Bank, N. J.
Phillips, C. E., & Co., Detroit, Mich.
Resisto-Loy Co., Grand Rapids, Mich.
Standard Steel & Wire Co., Bolivar, Pa.
Victor Equipment Co., San Francisco, Calif.
Welding Equipment & Supply Co., Detroit, Mich.
Weldit, Inc., Detroit, Mich.

TUNGSTEN CARBIDE WELDING RODS

Air Reduction Sales Co., N. Y., N. Y.
American Mangenese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
Eutectic Welding Alloys Co., Flushing, N. Y.
Haynes Stellite Company, a Division of Union Carbide and Carbon Corp., Kokomo, Indiana
Industrial Overlay Metals, Inc., Eaton, Ohio
Mir-o-Col Alloy Co., Inc., Los Angeles, Calif.
Metal & Thermit Corp., N. Y. 17, N. Y.
National Cylinder Gas Co., Chicago 11, Ill.
Permalatem Welding Alloys Co., Red Bank, N. J.
Purnell Alloy Co., Angleton, Texas
Sight Feed Generator Co., The, W. Alexandria, Ohio
Stoody Co., Whittier, Calif.

WELDING and BRAZING KITS

Air Reduction Sales Co., N. Y., N. Y.
All-State Welding Alloys Co., White Plains, N. Y.
American Oxygen Service Corp., Harrison, N. J.
Atlas Welding Accessories Co., Ferndale, Mich.
Burdett Oxygen Co., Cleveland, Ohio
Dockson Corp., Detroit, Mich.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Liquid Carbonic Corp., Industrial Gas Div., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Millburn, Inc., Alexander, Baltimore, Md.
National Cylinder Gas Co., Chicago, Ill.
National Torch Tip Co., Pittsburgh, Pa.
National Welding Equipment Co., Ltd., San Francisco, Calif.
Sight-Feed Generator Co., West Alexandria, Ohio
Weldit, Inc., Detroit, Mich.

WELDING COMPOUNDS

(See: "Galvanizing Compounds," "Tinning Compounds")

WHITE METAL WELDING RODS

Aladdin Rod & Flux Mfg. Co., Grand Rapids, Mich.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
American Welding Alloys Corp., Brooklyn, N. Y.
Eutectic Welding Alloys Co., Flushing, N. Y.
Ever-Tite Alloys Corp., New York, N. Y.
Permalatem Welding Alloys Co., Red Bank, N. J.
Peterson Welding Laboratories, Kansas City, Mo.
Ragle, J. M. Industries, Kansas City, Mo.
Victor Equipment Co., San Francisco, Calif.
Welding Alloys Mfg. Co., Newark, N. J.
White Metal Rolling & Stamping Corp., Brooklyn, N. Y.

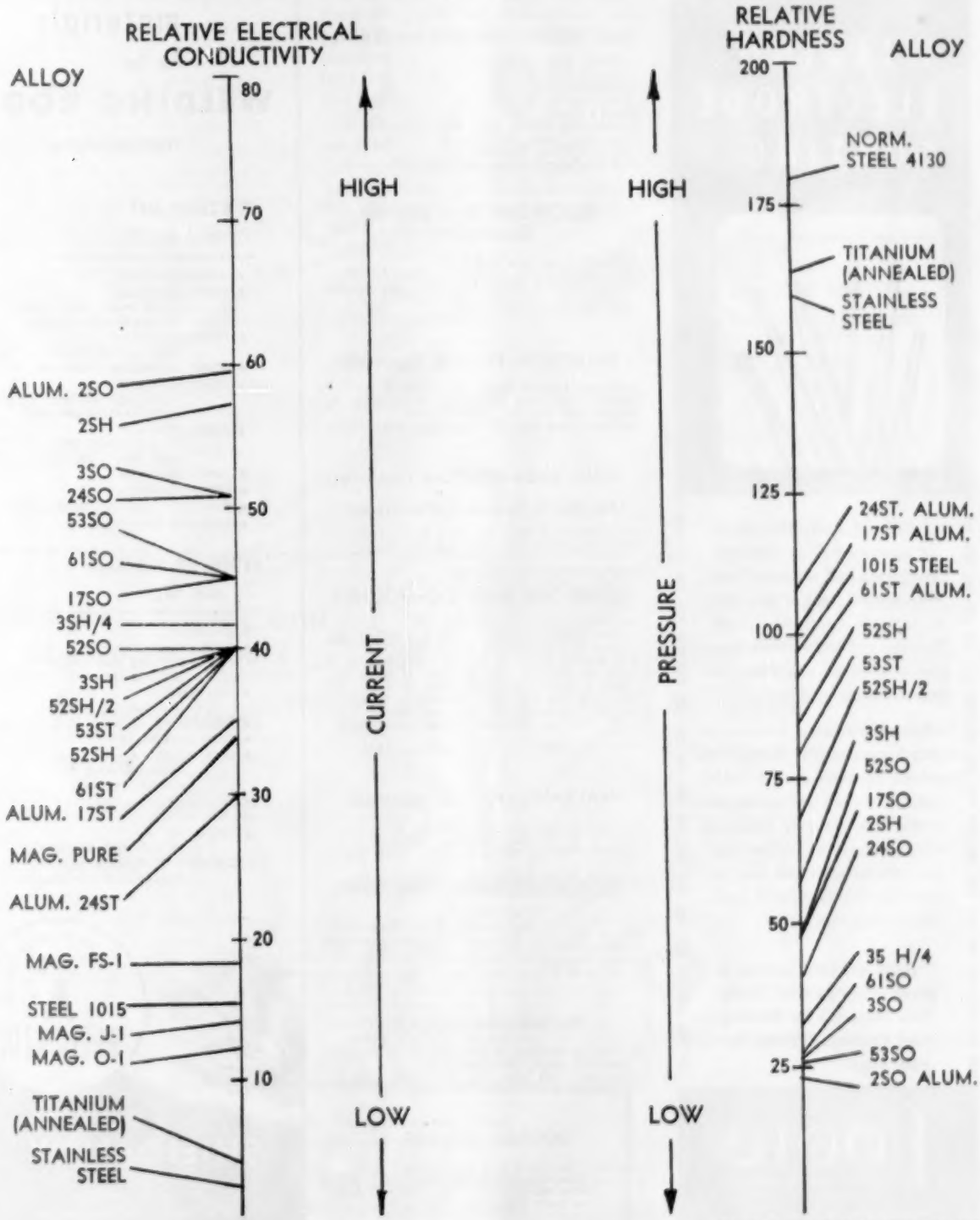
Miscellaneous

CASE HARDENING COMPOUNDS

All-State Welding Alloys Co., Inc., White Plains, N. Y.
American Cyanamid Co., New York, N. Y.
American Welding Alloys Corp., Brooklyn, N. Y.
Anti-Borax Compound Co., Inc., Fort Wayne, Ind.

(Continued on page 47A)

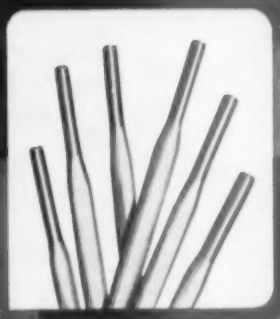
Material Characteristics as Related to Resistance-Welding Current and Pressure



Courtesy Kaiser Metal Products, Inc.

take another look at your

WELDING ELECTRODE COATING



. . . here is a scientific blend of upwards of ten different chemicals and minerals that transform a piece of wire into a valuable production tool. But the rod is no better than the quality of the materials that comprise its coating.

Foote's exacting production control assures the vitally important chemical and physical uniformity of all its coating materials. That is why Foote is recognized as the leading supplier of raw materials that go into the manufacture of quality welding electrodes.

Detailed information is given in the booklet "Foote Raw Materials for Welding Rod Coatings." Write for your copy.

Foote
MINERAL COMPANY
450 Eighteen W. Chelten Bldg., Phila. 44, Pa.

CASE HARDENING COMPOUNDS

(Continued from page 46)

Armor-Tuf Sales Co., New York, N. Y.
Doughty Lab. Co., New York, N. Y.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Holden, A. F. Co., The, Detroit, Mich.
Houghton, E. F., & Co., Philadelphia, Pa.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Standard Research Inc., New Haven, Conn.

ELECTRODE COATING MATERIALS

American Products Corp., Chicago, Ill.
Aufhauser Brothers Corp., New York, N. Y.
Foote Mineral Company, Philadelphia, Pa.
Hoeganaes Sponge Iron Corp., Riverton, N. J.
Metal & Thermit Corp., New York, N. Y.
Philadelphia Quartz Co., Philadelphia, Pa.
Shieldalloy Corp., New York, N. Y.
Thompson & Co., Oakmont, Pa.
Titanium Pigment Corp., New York, N. Y.

ELECTRODE PROCESSING EQUIPMENT

Aufhauser Bros., New York, N. Y.
Moslo Machinery Co., Cleveland, Ohio
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Yoder Co., Cleveland, Ohio

EXTRUSION PRESSES, Electrode

Aufhauser Brothers Corp., New York, N. Y.
Baldwin Locomotive Works, The, Philadelphia, Pa.
Detroit First Aid Co., Detroit, Mich.
Hydraulic Press Mfg. Co., The, Mount Gilead, Ohio

FLUX, Reclamation and Crushing

(See also: "Submerged-Arc Flux Crusher")

Atlas Welding & Mfg. Co., Long Beach, Calif.
Robert Holmes & Bros., Inc., Danville, Illinois

FORGE WELDING COMPOUNDS

Allen, L. B., Co., Inc., Chicago, Ill.
Anti-Borax Compound Co., Inc., Fort Wayne, Ind.
Johnson Mfg. Co., Mount Vernon, Iowa
K-G Welding & Cutting Co., Inc., New York, N. Y.
Linde Air Products Co., The, Unit of Union Carbide & Carbon Corp., New York, N. Y.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Modern Engineering Co., St. Louis, Mo.
Smith Welding Equipment Corp., Minneapolis, Minn.
Victor Equipment Co., San Francisco, Calif.

GALVANIZING COMPOUNDS

Agat-Detroit Co., Ann Arbor, Mich.
Allen, L. B., Co., Inc., Chicago, Ill.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
American Solder & Flux Co., Philadelphia, Pa.
du Pont, E. I., de Nemours & Co., Inc., Wilmington, Dela.
Farrelloy Co., Philadelphia, Pa.
Galv-Weld, Inc., Dayton, Ohio (Stick forms)
Johnson Mfg. Co., Mount Vernon, Iowa
Metalloy Products, Inc., Los Angeles, Calif.
Ohmer, George H., Dayton, Ohio
G. W. Smith & Sons, Inc., Dayton, Ohio

POTASSIUM SILICATE

du Pont de Nemours & Co., Inc., E. I., Grasselli Chemicals Dept., Wilmington, Del.
Pennsylvania Salt Mfg. Co., Philadelphia, Pa.
Philadelphia Quartz Co., Philadelphia, Pa.

SODIUM SILICATE

American Chemical & Flux Co., Brooklyn, N. Y.
Diamond Alkali Co., Pittsburgh, Pa.
E. I. duPont deNemours & Co., Inc., Grasselli Chemicals Dept. Wilmington, Del.
Liquid Carbonic Corp., The, Chicago, Ill.
Pennsylvania Salt Mfg. Co., Philadelphia, Pa.
Philadelphia Quartz Co., Philadelphia, Pa.

SHIELDALLOY

materials for the WELDING ROD manufacturer

POWDERED METALS and ALLOYS

- CHROMIUM METAL "98"
- FERRO CHROMIUM (LOW, HIGH AND "EXTRA" HIGH CARBON GRADES)
- FERRO COLUMBIUM (10:1 — Cb:Ta GRADE)
- FERRO COLUMBIUM-TANTALUM
- FERRO MANGANESE (LOW, MEDIUM AND HIGH CARBON GRADES)
- FERRO TITANIUM (LOW CARBON 30% AND 40% Ti GRADES)
- FERRO TUNGSTEN
- FERRO VANADIUM
- TUNGSTEN "MELTING BASE ALLOY"
- TITANIUM ALUMINUM

PROCESSED MINERALS and ORES

- CHROMITE
- "AOF" FLUORSPAR (COARSE AND FINELY GROUND GRADES)
- HAUSMANNITE (MANGANESE OXIDE)
- ILMENITE
- IRON CARBONATE
- IRON OXIDE (HEMATITE AND MAGNETITE ORES)
- KAOLIN CLAY
- "SM" MICA
- RUTILE "96" (MILLED AND GRANULAR)
- ZIRCON — ZIRCONIUM SILICATE (MILLED AND GRANULAR)

METALS · ALLOYS · PROCESSED MINERALS
SHIELDALLOY

SHIELDALLOY
CORPORATION
EXECUTIVE OFFICES
99 PARK AVENUE, NEW YORK 16, N. Y.
PLANT
NEWFIELD, NEW JERSEY

SURFACE-HARDENING POWDER

All-State Welding Alloys Co., Inc., White Plains, N. Y.
American Welding Alloys, Inc., Brooklyn, N. Y.
Anti-Borax Compound Co., Inc., Ft. Wayne, Ind.
Armor-Tuf Sales Corp., New York, N. Y.
Childs Aluminum Solder Co., New York, N. Y.
Doughty Laboratories, Inc., New York, N. Y.
Lincoln Electric Co., Cleveland, Ohio
Purnell Alloy Co., Angleton, Texas
Wall Colmonoy Corp., Detroit, Mich.

TINNING COMPOUNDS

Aladdin Rod & Flux Co., Grand Rapids, Mich.
Allen, L. B., Co., Inc., Chicago, Ill.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
American Solder & Flux Co., Philadelphia, Pa.
American Welding Alloys Corp., Brooklyn, N. Y.
Anti-Borax Compound Co., Inc., Fort Wayne, Ind.
Childs Aluminum Solder Co., New York, N. Y.
Division Lead Co., Summit, Ill.
E. I. duPont de Nemours & Co., Grasselli Chemicals Dept., Wilmington, Dela.
Eagle-Picher Co., The, Cincinnati, Ohio
Eutectic Welding Alloys Co., Flushing, N. Y.
Farrelloy Co., Philadelphia, Pa.
Flux-All Chemical Products, New York, N. Y.
Johnson Mfg. Co., Inc., Mount Vernon, N. Y.
Kirk, Morris P., & Son, Inc., Los Angeles, Calif.
Klem Chemicals, Inc., Dearborn, Mich.
Lake Chemical Co., Chicago, Ill.
Metal Bond Mfg. Co., St. Louis, Mo.
Metalloy Prod. Co., Los Angeles, Calif.
Modern Engineering Co., Inc., St. Louis, Mo.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Pal-Weld Mfg. Co., Seattle, Wash.
Ruby Chemical Co., The, Columbus, Ohio
G. W. Smith & Sons, Inc., Dayton, Ohio
Swiss Laboratory, Cleveland, Ohio
Wayne Chemical Products Co., Detroit, Mich.
York Engineering Co., Chicago, Ill.

RESISTANCE EQUIPMENT

ALL types of resistance-welding equipment, such as butt, flash, projection, seam and spot welders, as well as controls, electrodes and accessories for this process are listed here. This series carries the classification numbers 700-799.

While NWSA has arranged the sub-heads in a logical alphabetical order so far as resistance equipment is concerned, the Fact File Issue carries the alphabetical listing throughout. The sub-heads are:

710 Butt welding
720 Flash welding
730 Projection welding
740 Seam welding
750 Spot welding
760 Controls
770 Tip-wheels
780 Miscellaneous
790 Accessories

AUTOMATIC TIMERS

(See: "Resistance Welding Timers")

BENCH WELDERS

Ames Spot Welder Co., Inc., Brooklyn, N. Y.
Eisler Engineering Co., Inc., Newark, N. J.
Federal Tool Engineering Co., Cedar Grove, N. J.
Larkin Welder & Machine Corp., Brooklyn, N. Y.
Metron Instrument Co., Denver, Colo.
Stryco Mfg. Co., San Francisco, Calif.
Taylor Winfield Corp., Warren, Ohio
Tweezer Weld, Div. of Federal Tool Engrg. Inc., Newark, N. J.
Unitek Corp., Pasadena, Calif.
Vangtronic Corp., The, Bridgeport, Conn.

BRAZERS, Band Saw Electric

(See: "Resistance-Brazing Machines")

BRAZING MACHINES, Resistance

(See: "Resistance-Brazing Machines")

BRAZING OUTFITS, Incandescent Carbon

Banner Mfg. Co., Milwaukee, Wis.
Ergolyte Mfg. Co., Philadelphia, Pa.
General Electric Co., Schenectady, N. Y.
Marquette Mfg. Co., Minneapolis, Minn.
Progressive Welder Co., Detroit, Mich.
Trindl Products, Ltd., Chicago, Ill.
Weldex, Inc., Detroit, Mich.
Westinghouse Elec. Corp., Pittsburgh, Pa.

BUTT and FLASH WELDERS

Acme Electric Welder Co., Los Angeles, Calif.
Acro Welder Mfg. Co., Milwaukee, Wis.
Agnew Electric Co., Milford, Mich.
Alphil Spot Welder Mfg. Co., Brooklyn, N. Y.
Ames Spot Welder Co., Inc., Brooklyn, N. Y.
Banner Manufacturing Co., Milwaukee, Wis.
Central Sales Corp., The, Chicago, Ill.
Coddington, E. D., Mfg. Co., Milwaukee, Wis.
DoAll Co., The, Des Plaines, Ill.
Eisler Engineering Co., Inc., Newark, N. J.
Expert Welding Mach. Co., The, Detroit, Mich.
Federal Mach. & Welder Co., The, Warren, Ohio
Federal Tool Engineering Co., Cedar Grove, N. J.
Larkin Welder & Machine Corp., Brooklyn, N. Y.
Link Welder Corp., Detroit, Mich.
Martin Electric Co., Detroit, Mich.
Micro Products Co., Chicago, Ill.
Multi-Hydrometic Welding & Mfg. Co., East Detroit, Mich.
National Elec. Welding Mach. Co., Bay City, Mich.
Peer, Inc., Benton Harbor, Mich.
Precision Welder & Flexopress Corp., Cincinnati, Ohio
Progressive Welder Sales Co., Detroit, Mich.
Raytheon Mfg. Corp., Waltham, Mass.
Resistance Welder Corp., Bay City, Mich.
Rex Welder & Equipment Co., Kansas City, Mo.
Sciaky Bros., Inc., Chicago, Ill.
Sterling Utilities Co., Inc., Brooklyn, N. Y.
Stryco Mfg. Co., San Francisco, Calif.
Swift Elec. Welder Co., Detroit, Mich.
Taylor-Winfield Corp., Warren, Ohio
Thomson Electric Welder Co., Lynn, Mass.
Topeka Fdry. & Iron Wks., Topeka, Kan.
Unitek Corp., Pasadena, Cal.
Universal Welder Corp., Cleveland, Ohio
Vangtronic Corp., The, Bridgeport, Conn.
Weldex, Inc., Detroit, Mich.
Welding Machines Mfg. Co., Detroit, Mich.

BUTT-WELDING ATTACHMENT

Ames Spot Welder Co., Inc., Brooklyn 19, N. Y.
Eisler Engineering Co., Inc., Newark, N. J.
Hoffman Co., Robt. W., Inc., Chicago, Ill.
Stryco Mfg. Co., San Francisco, Calif.
Universal Welder Corp., Cleveland, Ohio

CARBON-PILE CONTACTORS

Clark Controller Co., The, Cleveland, Ohio
Hoffman, R. W. Co., Inc., Chicago, Ill.
Speer Carbon Co., St. Marys, Pa.
Westinghouse Electric Corp., Pittsburgh, Pa.

HOEGANAES SPONGE IRON COATED ELECTRODES give FASTER WELDING SPEEDS with NEW STANDARDS OF QUALITY

NOW . . . Hoeganaes Sponge Iron Powders have added new standards of performance to conventional electrodes. As an electrode coating, Hoeganaes Sponge Iron Powder is used by many leading manufacturers of welding electrodes to more efficiently use the heat of the arc. The result: faster speeds and new standards of quality.

HOEGANAES

Specification data available to Electrode manufacturers, write:

HOEGANAES SPONGE IRON CORP.
RIVERTON, NEW JERSEY

Resistance Welding Dos and Don'ts*

DOs

1. Use the proper electrode material for the job you are doing.
2. Use standard electrodes wherever possible.
3. Use the most suitable tip diameter for the thickness of the stock being welded.
4. Connect the water inlet hose to the proper holder inlet so that water flows through the center cooling tube first.
5. Cool spot-welding tips internally with cool water flowing at a rate of at least 1½ gal per minute through each tip.
6. Be sure that the internal water-cooling tube of the holder projects into the tip water hole to within ½ in. of the tip-hole bottom.
7. Be sure that the top of the adjustable water-cooling tube in the holder is cut at any angle to avoid jamming the tip down and shutting off the water.
8. Place a thin film of cup grease on the tip taper prior to inserting it in the holder. This will make it easier to remove.
9. Use ejector-type holders for easy removal of tips and to avoid damage to tip walls.
10. Keep the tip taper and holder taper clean, smooth and free from foreign deposits.
11. Dress spot-welding electrodes often enough to maintain weld quality.
12. Dress electrodes to their original contour in a lathe whenever possible.
13. Clean and tighten regularly all electrical connections in the secondary circuit.
14. Keep the welder throat area to the minimum permissible dimensions.
15. Lubricate the resistance welder's motor, gears and slides at periodic intervals.
16. Calibrate all pressure-applying mechanisms so that the exact welding pressure can always be known.
17. Clean—either chemically or mechanically—all material to be welded that has dirty, scaly, oxidized or otherwise contaminated surfaces.
18. Use suitable automatic current-timing devices.
19. Have all timing devices suitably calibrated.
20. Use synchronous electronic timing controls for short timing periods or in the welding of materials having critical weldability.
21. Mount timing devices rigidly to protect them from vibration or abuse and mount them for ready servicing.
22. Use synchronous controls, providing interrupted timing periods, in all seam-welding applications.
23. Use electronic or magnetic welding contactors developed specifically for welding applications.
24. When using an ignitron control with a welder drawing less than 40 amperes from the line, provide a load resistor across the primary so that the current does not fall below 40 amperes.
25. Keep all electrical contacts in relays, switches and contactors in good condition by frequent inspection and dressing or replacement if necessary.

DON'Ts

1. Never use unidentified electrodes or electrode materials.
2. Avoid special, offset or irregular tips when the job can be done with a standard straight tip.
3. Don't use small tips on heavy-gauge welding jobs, or large tips on small work.
4. Never use water hose that will not fit the holder water-connection nipples snugly.
5. Do not allow water connections to become leaky, clogged or broken.
6. Avoid using holders with leaking or deformed tapers.
7. Do not permit the adjustable water tube to be "frozen" by an accumulation of deposits. A few drops of oil periodically will keep the tube free.
8. Do not allow electrodes to remain idle for extended periods in tapered holder seats.
9. Don't use pipe wrenches or similar tools to remove electrodes.
10. Avoid the use of white lead or similar compounds to seal a leaking taper.
11. Never permit a spot-welding tip to mushroom enough to make dressing difficult.
12. Never dress electrodes with a coarse file.
13. Don't permit flash particles to accumulate on the welding transformer.
14. Do not use a long welder arm extension or a wide arm separation unless the shape of the parts to be welded necessitates it.
15. Shun lubricants which are not recommended by the welder manufacturer.
16. Never permit sliding pressure members to become too tight or jammed since this will increase the frictional forces and inertia of the moving members.
17. Never weld unclean metals, scaly stock or metals with poor surface condition.
18. Avoid the use of slow-operating magnetic contactors if you are doing precision work.
19. Do not employ non-synchronous timing devices for welding materials with critical welding characteristics—*i.e.*, aluminum, magnesium and brass.
20. Avoid expensive synchronous timing devices for long timing, non-critical applications.
21. Don't use welding contactors or ignitron controls of capacity not within the rating of the welding machine and duty cycle of the application.
22. Never operate a synchronous ignitron control with the secondary of the welder open circuited.
23. Never use non-synchronous timing devices for short timing (less than 4 or 5 cycles).
24. Don't expect the timer to operate satisfactorily if the limit relay or switch in the timer-welder circuit chatters, or the contacts are oxidized or pitted.
25. Do not expect the timer to provide uniform timing pulses if the primary voltage regulation is poor. Ascertain timer manufacturer's recommended limits of voltage variation.

* From "Resistance Welding Data Book" published by P. R. Mallory & Co., Inc., Indianapolis, Ind.

Better Resistance Welding Costs Less ...When You Use MALLORY Materials

A uniquely wide variety of resistance welding supplies and materials, developed by Mallory metallurgy, will help you to make more welds... better welds... per hour of production time or per dollar spent on electrodes and holders.

MALLORY ELECTRODE HOLDERS

A diversified line of holders in straight, offset, paddle-type and universal models, permits ready set-ups for scores of welding jobs. Low inertia holder, spring-loaded for light pressure work, is particularly useful for non-ferrous metals ... on light gauges, cross wire welding and the like. "KO" leak-proof holders give fast electrode replacement. Standard designs include light duty, standard, heavy duty, "Premium and Nu-Twist", each developed for specific ranges of work.

MALLORY REPLACEABLE CAP ELECTRODES

For high production usage where cap type electrodes are applicable, Mallory supplies tapered shanks with caps that can be replaced in seconds. A variety of cap shapes is available. Two different designs offer either a shouldered shank or shouldered cap as desired.

MALLORY FLUTED ELECTRODES®

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(Continued from page 50)

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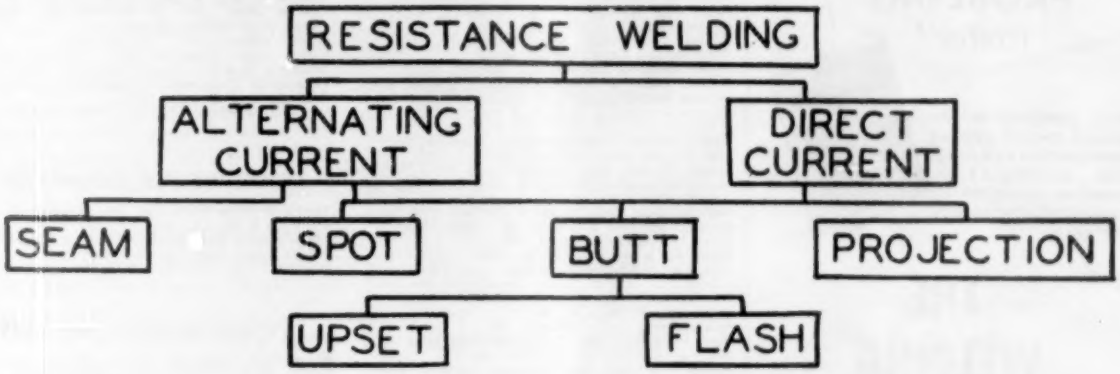
Resistance Welding Fundamentals



Definition

Resistance welding is a pressure welding process wherein the heat for welding is obtained by the resistance to flow of an electric current.

Principle

Resistance welding is accomplished when two or more pieces of metal are clamped between copper electrodes and an electric current is passed through them. Heat generated between the pieces of metal reduces the metal to a plastic state; then clamping pressure induces fusion. Pressure is required to make the resistance between the electrodes and the metal low as compared to the resistance between the pieces of metal; this condition must prevail when power is applied if burning of the working surfaces is to be avoided.

Fundamental Factors

The three fundamental factors which must be controlled in resistance welding are:

1. Current.
2. Time.
3. Pressure.

Heat Generation

It should be remembered that in any resistance welding process, the heat is generated within the metal and is not heat absorbed from an outside source. For this reason, the heat generated in resistance welding may be determined by the simple formula: Heat equals (Current)^2 times Resistance times Time or $H = I^2RT$.

Heat Generated

The energy represented by the expression I^2RT may be expressed in electrical units as watt-seconds or heat units as calories. If expressed in calories, a factor of 0.24 must be inserted in the formula as a watt-second is 0.24 calories. When resistance welding heat is to be discussed in calories, the formula becomes: Calories$=0.24\ I^2RT$.

Current Variables

Resistance welding current has three fundamental variables which must be controlled for consistent results. These are: (1) timing, (2) characteristic of the current wave during welding and (3) value of the current for a given weld.

Timing

Weld current timing in resistance welding may be accomplished by one of several methods. For example: (1) manually timed magnetic contactors, (2) mechanically timed magnetic contactors, (3) electrically timed magnetic contactors, (4) synchronous-motor-operated contactors, (5) electrically or mechanically timed ignitron tube contactors, (6) fully synchronous electronic timers.

Resistance Factors

The resistance in resistance welding is obtained from three sources: (1) The specific resistance of the material to be welded; this resistance is constant. The resistance from the other sources varies according to the pressure used. These resistances are: (2) resistance between the electrode and the work and (3) resistance between the pieces to be welded.

Pressure Methods

Pressure in resistance welding may be obtained: (1) mechanically, (2) pneumatically, (3) hydraulically, or (4) by a combination of one or more of these means.

Spot Welding Variables

Ten variables affect spot welding results:

1. Human element.
2. Pressure.
3. Current.
4. Time.
5. Material.
6. Length of horns.
7. Distance between horns.
8. Power factor of welder and circuit.
9. Condition of electrodes and work.
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ROLLING SHUNTS

("See: Resistance Welding Cables")

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Acme Electric Welder Co., Los Angeles, Calif.
Acro Welder Mfg. Co., Milwaukee, Wis.
Alphit Spot Welder Mfg. Co., Brooklyn, N. Y.
American Electric Fusion Corp., Chicago, Ill.
Ames Spot Welder Co., Inc., Brooklyn, N. Y.
Banner Mfg. Co., Milwaukee, Wis.
Central Sales Corp., The, Chicago, Ill.
Delta Welder Corp., Detroit, Mich.
Expert Welding Machine Co., Detroit, Mich.
Federal Mach. & Welder Co., The, Warren, Ohio
Federal Tool Engineering Co., Cedar Grove, N. J.
Goodrich Welding Equipment Corp., Hudsonville, Mich.
Larkin Welder & Machine Corp., Brooklyn, N. Y.
Link Welder Corp., Detroit, Mich.
Martin Electric Co., Detroit, Mich.
Multi-Hydromatic Welding & Mfg. Co., East Detroit, Mich.
National Elec. Welding Mach. Co., Bay City, Mich.
Niagara Machine & Tool Works, Buffalo, N. Y.
Peer, Inc., Benton Harbor, Mich.
Penn Tool & Machine Co., Danville, Ill.
Precision Welder & Flexopress Corp., Cincinnati, Ohio
Progressive Welder Sales Co., Detroit, Mich.
Resistance Welder Co., Bay City, Mich.
Sciaky Bros., Inc., Chicago, Ill.
Sight Feed Generator Co., West Alexandria, Ohio
Sterling Utilities Co., Brooklyn, N. Y.
Stryco Mfg. Co., San Francisco, Calif.
Swift Electric Welder Co., Detroit, Mich.
Taylor-Winfield Corp., The, Warren, Ohio
Thomson Electric Welder Co., Lynn, Mass.
United Welder Corp., Detroit, Mich.
Universal Welder Corp., Cleveland, Ohio
Victory Engineering & Machine Works, Inc., St. Louis, Mo.
Weldex, Inc., Detroit, Mich.
Welding Machines Mfg. Co., Detroit, Mich.

SEAM WELDING WHEELS

Ampco Metal Inc., Milwaukee, Wis.
Electroloy Co., The, Inc., Bridgeport, Conn.
Mallory, P. R., & Co., Inc., Indianapolis, Ind.
S-M-S Corp., Detroit, Mich.
Smith Bros. & Hughes, San Diego, Cal.
Tipaloy, Inc., Detroit, Mich.
Welding Sales & Engineering Co., Detroit, Mich.
WW Alloys Inc., Div of Fansteel Metallurgical Corp., Detroit, Mich.

SHUNTS

(See: "Resistance Welding Cables")

SOLDERING UNITS, RW

Vemaline Products Co., Hawthorne, N. J.

SPOT WELDERS

Acme Elec. Welder Co., Los Angeles, Calif.
Acro Welder Mfg. Co., Milwaukee, Wis.
Agnew Electric Co., Milford, Mich.
Alphit Spot Welder Mfg. Co., Brooklyn, N. Y.
American Elec., Fusion Corp., Chicago, Ill.
Ames Spot Welder Co., Inc., Brooklyn, N. Y.
Ampower Products Co., Oaklawn, Ill.
Aro Spot Welders, Inc., New York, N. Y.
Banner Manufacturing Co., Milwaukee, Wis.
Delhart Eng. & Mfg. Co., Inc., Van Dyke, Mich.
Delta Welder Corp., Detroit, Mich.
Eisler Engineering Co., Inc., Newark, N. J.
Electric Welding Machine Co., Detroit, Mich.
Expert Welding Machine Co., Detroit, Mich.
Federal Mach. & Welder Co., The, Warren, Ohio
Goodrich Welding Equipment Corp., Hudsonville, Mich.
Greyhound A. C. Arc Welder Corp., Brooklyn, N. Y.
Hercules Electric & Mfg. Co., Inc., Brooklyn, N. Y.
Interstate Machinery Co., Chicago, Ill.
Larkin Welder & Machine Corp., Brooklyn, N. Y.
Link Welder Corp., Inc., Los Altos, Calif.
Martin Electric Co., Detroit, Mich.
Metron Instrument Co., Denver, Colo.
Micro Products Co., Chicago, Ill.
Miller Elec. Mfg. Co., Appleton, Wis.
Multi-Hydromatic Welding & Mfg. Co., East Detroit, Mich.
National Cylinder Gas Co., Chicago, Ill.
National Elec. Welding Mach. Co., Bay City, Mich.
Patent Specialties, Inc., Miami, Fla.
Peer Incorporated, Benton Harbor, Mich.
Precision Welder & Flexopress Corp., Cincinnati, Ohio
Primeweld Corp., Detroit, Mich.
Progressive Welder Sales Co., Detroit, Mich.
Raytheon Mfg. Co., Equipment Sales Div., Waltham, Mass.
Resistance Welder Corp., Bay City, Mich.
Rex Welder and Engineering Co., Kansas City, Mo.
Sciaky Bros., Inc., Chicago, Ill.
Sterling Utilities Co., Brooklyn, N. Y.
Stryco Mfg. Co., San Francisco, Calif.
Swift Electric Welder Co., Detroit, Mich.
Taylor-Winfield Corp., The, Warren, Ohio
Thomson Electric Welder Co., Lynn, Mass.
Topeka Foundry & Iron Works, Topeka, Kan.
Tweezer Weld, Div. of Federal Tool Engineering, Inc., Newark, N. J.
United Welder Corp., Detroit, Mich.
Unitek Corp., Pasadena, Calif.
Universal Welder Corp., Cleveland, Ohio
Vengtronic Corp., The, Bridgeport, Conn.
Weldex, Inc., Detroit, Mich.
Welding Machines Mfg. Co., Detroit, Mich.

SPOT WELDER CONVERTER

Expert Welding Mach. Co., Detroit, Mich.
Hoffman, R. W. Co., Inc., Chicago, Ill.
Rex Welder & Equipment Co., Kansas City, Mo.
Uniflex Cable Co., Detroit, Mich.
Weltronic Co., Detroit, Mich.

STORED ENERGY WELDERS

Federal Machine & Welder Co., Warren, Ohio
Federal Tool Engineering Co., Cedar Grove, N. J.
Kahle Engineering Co., North Bergen, N. J.
Raytheon Mfg. Co., Waltham, Mass.
Sciaky Bros., Inc., Chicago, Ill.
Taylor Winfield Corp., Warren, Ohio
Unitek Corp., Pasadena, Calif.

TRIMMERS, Flash

(See: "Flash Trimmers")

TUBE MILLS

Acro Welder Mfg. Co., Milwaukee, Wis.
American Electric Fusion Corp., Chicago, Ill.
McKay Machine Co., Youngstown, Ohio
Yoder Co., Cleveland, Ohio
Youngstown Foundry & Machine Co., Youngstown, Ohio

TUBES, Power Conversion

(See "Electronic Tubes")

TUBES, Power Rectifier

(See "Electronic Tubes")

TUBES, Welding Control

(See "Electronic Tubes")

TRADE NAMES SECTION

Starts on Page 81

MISCELLANEOUS WELDING ITEMS

THE NWSA classification which carries numbers 800-899—Miscellaneous welding items—seems to be a category that undoubtedly will lead to confusion.

In theory, this heading covers all those items sold by a welding supply distributor which may be used in welding, but are not covered by the four basic welding processes of gas, arc, inert-gas or resistance welding. By this definition, there will be found in this category products ranging from agriculture repair items to wedge bars.

NWSA is rather vague as to just what might be covered and to date has established only five sub-headings. They are:

810 Agriculture
820 Applicator bars and plates
830 Jigs and fixtures
840 Hand tools
860 Positioning equipment

ANNEALING and CASE HARDENING POTS

Eclipse Fuel Engineering Co., Rockford, Ill.
General Electric Co., Schenectady, N. Y.
Holden, A. F., Co., The, New Haven, Conn.
Hollands Mfg. Co., Erie, Pa.
Hoskins Mfg. Co., Detroit, Mich.
Johnson Gas Appliance Co., Cedar Rapids, Iowa
Lukens Steel Co., Coatsville, Pa.
Mahr Mfg. Co., Div. Diamond Iron Works, Inc., Minneapolis, Minn.
R. S. Products Corp., Philadelphia, Pa.
Standard Research Inc., New Haven, Conn.
Sunbeam Stewart Industrial Furnace, Division Sunbeam Corp., Chicago, Ill.

APPLICATOR BARS

Allied Tractor & Steel Prod. Corp., Cleveland, Ohio
American Manganese Steel Div. of American Brake Shoe Co., Chicago Heights, Ill.
Industrial Overlay Metals, Inc., Eaton, Ohio
National Cylinder Gas Co., Chicago, Ill.
Pyramid Steel Co., Cleveland, Ohio
Steel Sales Corp., Chicago, Ill.
Stulz-Sickles Co., Newark, N. J.

ARC TIME TOTALIZERS

DV Controls Div., Engineered Instruments, Inc., Hayward, Calif.
Harnischfeger Corp., Milwaukee, Wis.

BRAZING FURNACES

(See also: "Furnaces, Preheating, Annealing, Stress Relieving")

Ajax Electric Co., Inc., Philadelphia, Pa.
Continental Industrial Engineers' Co., Chicago, Ill.
Despatch Oven Co., Minneapolis, Minn.
Eclipse Fuel Engineering Co., Rockford, Ill.
Falcon Equipment Co., New Brighton, Pa.
Gas Appliance Service, Inc., Chicago, Ill.
Hayes, Inc., C. I., Providence, R. I.
Hevi Duty Electric Co., Milwaukee, Wis.
Holcroft & Co., Detroit, Mich.
Holden, A. F., Co., The, Detroit, Mich.
Johnson Gas Appliance Co., Cedar Rapids, Iowa
Lepel High Frequency Lab., Inc., New York, N. Y.
Lindberg Engineering Co., Chicago, Ill.
Ohio Crankshaft Co., The, Tocco Div., Cleveland, Ohio
Selas Corp. of America, Philadelphia, Pa.
Sunbeam Industrial Furnace Div., Sunbeam Corp., Chicago, Ill.
Surface Combustion Corp., Toledo, Ohio
Thermo Electric Mfg. Co., Dubuque, Iowa
Vulcan Corp., Philadelphia, Pa.
Westinghouse Electric Corp., Pittsburgh, Pa.
Young Brothers Co., Cleveland, Ohio

CARBON (Blocks, Paste)

Air Reduction Sales Co., New York, N. Y.
Atlas Welding Accessories Co., Ferndale, Mich.
Becker Bros. Carbon Co., Cicero, Ill.
Joseph Dixon Crucible Co., Jersey City, N. J.
Marquette Mfg. Co., Minneapolis, Minn.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Carbon Div., Union Carbide & Carbon Corp., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Ohio Carbon Co., Cleveland, Ohio
Pure Carbon Co., Inc., St. Marys, Pa.
Speer Carbon Co., St. Marys, Pa.
Steckpole Carbon Co., St. Marys, Pa.

CONTOUR MARKERS

Contour Marker Corp., Compton, Calif.

COPPERS, Soldering

(See: "Soldering Irons")

COPPERS, Soldering (Electric Heat)

(See: "Electric Soldering Irons")

DIPPER TEETH REPOINTERS

(See: "Wedge Bars")

ELECTRODE CARRIERS

Aljoy Manufacturing Co., Inc., Philadelphia, Pa.
American Oxygen Service Corp., Harrison, N. J.
Boyer-Campbell Co., The, Detroit, Mich.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Ergolyte Mfg. Co., Philadelphia, Pa.
Fibre-Metal Prod. Co., Chester, Pa.
Genter, C. O., Co., Chattanooga, Tenn.
Industrial Prod. Co., Philadelphia, Pa.
Kimball Safety Prod. Co., Cleveland, Ohio
Metal & Thermit Corp., N. Y. 17, N. Y.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
S. C. Leather Co., Pittsburgh, Pa.
Safety Clothing & Equip. Co., Cleveland, Ohio
Singer Glove Mfg. Co., Chicago, Ill.
Singer Leather Clothing Co., Philadelphia Pa.
Tillman & Co., John, Long Beach, Cal.

ELECTRODE-DRYING OVENS

Archer, Fred C., Inc., Milwaukee, Wis.
Aufhauser Bros. Co., New York, N. Y.
Despatch Oven Co., Minneapolis, Minn.
Grieve & Hendry Co., Inc., Chicago, Ill.
Phoenix Prod. Co., Milwaukee, Wis.
Ross, J. O., Engineering Co., New York, N. Y.
Steiner-Ives Co., Newark, N. J.
Young Bros. Co., Cleveland, Ohio

ELECTRODE-STORAGE OVENS

Archer, Fred C., Inc., Milwaukee, Wis.
Despatch Oven Co., Minneapolis, Minn.
Grieve-Hendry Co., Chicago, Ill.
Phoenix Prod. Co., Milwaukee, Wis.

FIRE POTS, Solder Iron—Gasoline, Kerosene, Gas

Aeroil Products Co., Inc., So. Hackensack, N. J.
Clayton & Lambert Mfg. Co., Louisville, Ky.
Diener, Geo. W., Mfg. Co., Chicago, Ill.
Eclipse Fuel Engineering Co., Rockford, Ill.
Falcon Equipment Co., New Brighton, Pa
General Propane Gas, Mineola, N. Y.
Goss Gas, Inc., Glenshaw, Pa.
Hauck Mfg. Co., Brooklyn 15, N. Y.
Hollands Mfg. Co., Erie, Pa.
Insta-Gas Corp., Detroit, Mich. (Also Bottled Gas.)
Johnson Gas Appliance Co., Cedar Rapids, Iowa
Mahr Mfg. Co., Div. of Diamond Iron Works, Inc., Minneapolis, Minn.
Purity Cylinder Gases, Inc., Grand Rapids, Mich.
Syracuse Alloy Metals Corp., Syracuse, N. Y.
Turner Brass Works, The, Sycamore, Ill.
Unique Mfg. Co., Inc., Chicago, Ill.
Vulcan Electric Co., Danvers, Mass.

FITTINGS, Pipe Welding

(See: "Welding Fittings")

FIXTURES, Welding

(See: "Jigs and Fixtures," and "Positioners")

FORGES, Brazing, Saw

Buffalo Forge Co., Buffalo, N. Y.
Champion Blower & Forge Co., Lancaster, Pa.
Eclipse Fuel Engineering Co., Rockford, Ill.
Forrelloy Co., Philadelphia, Pa.
Johnson Gas Appliance Co., Cedar Rapids, Iowa
Sunbeam Stewart Industrial Furnace Division, Sunbeam Corp., Chicago, Ill.

FURNACES, Preheating, Annealing Stress-Relieving

(See also: "Brazing Furnaces")

Ajax Electric Co., Inc., Philadelphia, Pa.
Ajax Electrothermic Corp., Trenton, N. J.
Combustion Control Corp., Cambridge, Mass. (Stress-Relieving only)
Commerce Pattern Foundry & Machine Co., Detroit, Mich.
Continental Industrial Engineers' Co., Chicago, Ill.
Despatch Oven Co., Minneapolis, Minn.
Eclipse Fuel Engineering Co., Rockford, Ill.
Falcon Equipment Co., New Brighton, Pa.
Gas Appliance Service, Inc., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Hayes, Inc., C. I., Providence, R. I.
Hevi-Duty Electric Co., Milwaukee, Wis.
Holcroft & Co., Detroit, Mich.
Holden, A. F., Co., The, Detroit, Mich.
Induction Heating Corp., Brooklyn, N. Y.
Johnson Gas Appliance Co., Cedar Rapids, Iowa

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FURNACES

(Continued from page 55)

Lepel High Frequency Lab., Inc., New York, N. Y.
Lindberg Engineering Co., Chicago, Ill.
Mahr Mfg. Co., Div. of Diamond Iron Works, Inc., Minneapolis, Minn.
Massillon Refractories Co., The, Massillon, Ohio
Metal Bond Mfg. Co., St. Louis, Mo.
RS Products Corp., Philadelphia, Pa.
Selas Corp. of America, Philadelphia, Pa.
Standard Research Inc., New Haven, Conn.
Sunbeam Industrial Furnace Div., Sunbeam Corp., Chicago, Ill.
Surface Combustion Corp., Toledo, Ohio
Thermo Electric Mfg. Co., Dubuque, Iowa
Unique Mfg. Co., Inc., Chicago, Ill.
Vulcan Corp., Philadelphia, Pa.
Westinghouse Electric Corp., Pittsburgh, Pa.
Young Brothers Co., Cleveland, Ohio

GAMMA-RAY EQUIPMENT

(See: "Inspection Equipment, Radium" and "Radium, Inspection")

HARDNESS-TESTING EQUIPMENT

American Machine & Metals, Inc., East Moline, Ill.
Ames, B. C., Co., Waltham, Mass.
Baldwin Locomotive Works, The, Philadelphia, Pa.
Buehler, Ltd., Chicago, Ill.
Detroit Testing Machine Co., Detroit, Mich.
Eastern Welding Equipment Co., New York, N. Y.
Gordon Claud S. Co., Chicago, Ill.
Industrial Overlay Metals, Eaton, Ohio
Riehle Testing Machine Div., American & Metals, Inc., East Moline, Ill.
Steel City Testing Machines, Inc., Detroit, Mich.
Wilson Mechanical Instrument Co., Inc., New York, N. Y.

INDUCTION-BRAZING EQUIPMENT

Ajax Electrothermic Corp., Trenton, N. J.
Ecco High Frequency Corp., North Bergen, N. J.
Federal Electric Co., Inc., Chicago, Ill.
Federal Telephone and Radio Corp., New York, N. Y.
Gordon Co., Claud S., Chicago, Ill.
Illinois Tool Works Electronics Div., Chicago, Ill.
Induction Heating Corp., Brooklyn, N. Y.
Lepel High Frequency Labs., Inc., New York, N. Y.
Lindberg Engineering Co., Chicago, Ill.
Marion Electrical Instrument Co., Manchester, N. H.
Ohio Crankshaft Co., The, Tocco Div., Cleveland, Ohio
Westinghouse Elec. Corp., Pittsburgh, Pa.

INSERTS, Tungsten Carbide

Air Reduction Sales Co., N. Y., N. Y.
American Manganese Steel Div. of American Brake Shoe Co., Chicago Heights, Ill.
Carboloy Dept., General Electric Co., Detroit, Mich.
Haynes Stellite Div., Union Carbide and Carbon Corp., Kokomo, Ind.
Permatatem Welding Alloys, Inc., Red Bank, N. J.
Purnell Alloy Co., Angleton, Texas
Stoody Co., Whittier, Calif.
Vascoloy-Ramet Corp., Waukegan, Ill.

INSPECTION, Dye Penetrant

Magnaflux Corp., Chicago, Ill.
Met-L-Chek Co., Los Angeles, Calif.
Turco Products, Inc., Los Angeles, Calif.

INSPECTION EQUIPMENT, Cobalt—60

St. John X-Ray Laboratory, Califon, N. J.
Tracerlab Inc., Boston, Mass.

INSPECTION EQUIPMENT, Fluorescent

Benjamin Electric Mfg. Co., Des Plaines, Ill.
Magnaflux Corp., Chicago, Ill.
St. John X-Ray Laboratory, Califon, N. J.

INSPECTION EQUIPMENT, Magnetic-Particle

Magnaflux Corp., Chicago, Ill.
Sonoflux Corp., Houston, Texas

INSPECTION EQUIPMENT, Radium

Canadian Radium & Uranium Corp., New York, N. Y.
Kelley-Koett Mfg. Co., The, Covington, Ky.
Radium Chemical Co., Inc., New York, N. Y.
St. John X-Ray Laboratory, Califon, N. J.

INSPECTION EQUIPMENT, Ultrasonic

Dice, J. W., Co., Englewood, N. J.
Electrocircuits, Inc., Pasadena, Calif.
Magnaflux Corp., Chicago, Ill.
Sperry Products, Inc., Danbury, Conn.
Triplett & Barton, Inc., Burbank, Calif.

INSPECTION EQUIPMENT, X-Ray

Andreasen, Holger, Inc., San Francisco, Calif.
Balteau Electric Corp., Stamford, Conn.
Bar-Ray Products, Inc., Brooklyn, N. Y.
Chicago Tool & Engineering Co., Chicago, Ill.
Claude S. Gordon Co., Chicago, Ill.
E. I. duPont de Nemours & Co., Inc., Pattern Screen Div., Towanda, Pa.
General Electric Co., X-Ray Div., Milwaukee, Wis.
Kelley-Koett Mfg. Co., The, Covington, Ky.
Machinery & Welder Corp., Chicago, Ill.
Machlett Laboratories, Inc., Springdale, Conn.
North American Philips Co., Inc., New York, N. Y.
Pako Corp., Minneapolis, Minn.
Picker X-Ray Corp., New York, N. Y.
Radium Chemical Co., Inc., New York, N. Y.
Ray Proof Corp., New York, N. Y.
St. John X-Ray Laboratories, Califon, N. J.
St. John X-Ray Service, Inc., Long Island City, N. Y.
Standard X-Ray Co., Chicago, Ill.
Triplett & Barton, Inc., Burbank, Calif.
Westinghouse Electric Corp., Pittsburgh, Pa.

JIGS and FIXTURES, Welding

Acro Welder Mfg. Co., Milwaukee Wis.
Allied Weld-Craft, Inc., Indianapolis, Ind.
Aronson Machine Co., Arcade, N. Y.
Automatic Welding Co., Tulsa, Okla.
Automatic Welding Co., Elm Grove, Wis.
Banner Mfg. Co., Milwaukee, Wis.
Bentley Weldery, Inc., Syracuse, N. Y.
Bunell Machine & Tool Co., Cleveland, Ohio
Dahlstrom Manufacturing Co., St. Paul, Minn.
Dalhart Eng. & Mfg. Co., Inc., Van Dyke, Mich.
Eisler Engineering Co., Inc., Newark, N. J.
Federal Machine & Welder Co., The, Warren, Ohio
Garfield Engineering Corp., Kansas City, Mo.
Gouran, Mark F., Philadelphia, Pa.
Hedstrom Industries, Inc., Chicago, Ill.
Herrick Co., C. B., Cleveland, Ohio
Layne-Held Corp., Higginsville, Mo.
Martin Electric Co., Detroit, Mich.
McFerron-Myers Prod. Co., Cleveland, Ohio
McHale Mfg. Co., Los Angeles, Calif.
Morton Mfg. Co., Muskegon Heights, Mich.
Multi-Hydromatic Welding & Mfg. Co., East Detroit, Mich.
Pandjiris Weldment Co., St. Louis, Mo.
Peck, Cecil C., Co., Cleveland, Ohio
Penn Tool & Machine Co., Danville, Ill.
Progressive Welder Sales Co., Detroit, Mich.
Ransome Machinery Co., Dunellen, N. J.
Rapid-Titan Mfg. Co., Grand Rapids, Mich.
Resistance Welder Corp., Detroit, Mich.
Service Machine Co., Elizabeth, N. J.
Smith Bros. & Hughes, San Diego, Cal.
Stoody Co., Whittier, Cal.
Swift Electric Welder Co., Detroit, Mich.
Vangtronic Corp., The, Bridgeport, Conn.
Warren Alloy, Pontiac, Mich.
Webb Corp., Webb City, Mo.
Welding Machines Mfg. Co., Detroit, Mich.
Westinghouse Electric Mfg. Co., Pittsburgh, Pa.
Wolverine Tool Co., Detroit, Mich.

LOCATORS

(See: "Welding Guides and Supports")

MAGNIFIERS, Inspection Heads

Boyer-Campbell Co., Detroit, Mich.
Brush Development Co., The, Cleveland, Ohio
Flood Safety Products Co., Chicago, Ill.
General Scientific Equipment Co., Philadelphia, Pa.
Pennsylvania Optical Co., Reading, Pa.
RCA Engineering Products Dept., Camden, N. J.
Stanley Electric Tools, New Britain, Conn.

METALLURGICAL APPARATUS

Buehler Ltd., Chicago, Ill.
Gordon Co., Claud S., Chicago, Ill.
Precision Scientific Co., Chicago, Ill.

METAL-MARKING CRAYONS

American Crayon Co., Sandusky, Ohio
Atlas Welding Accessories Co., Ferndale, Mich.
Blum, Julius, & Co., Inc., New York, N. Y.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Markal Co., Chicago, Ill.
Whittaker, Clark & Daniels, Inc., New York, N. Y.

NUTS, Weld

(See: "Weld Nuts")

PELLETS, Temperature Indicating

(See: "Temperature Indicating Pellets")

PIPE LAYOUT TOOL

Contour Marker Corp., Compton, Calif.
Interstate Sales Co., New York, N. Y.

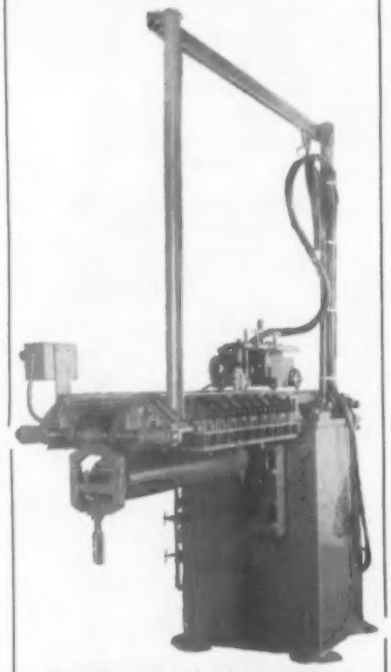
PLOW POINTS

Osmundson Spade Mfg. Co., Perry, Iowa
Weise Plow Welding Co., Inc., Perry, Iowa

PLOW REPOINTS

Osmundson Spade Mfg. Co., Inc., Perry, Iowa
Wiese Plow Welding Co., Perry, Iowa

CLAMPING FIXTURES



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Mott Products Co., Jackson, Mich.
Osmundson Spade Mfg. Co., Perry Iowa
Wiese Plow Welding Co., Perry, Iowa

PORTABLE WELDING SHOPS

American Oxygen Service Corp., Harrison, N. J.
Couse Mfg. Co., Inc., Newark, N. J.
Hebard & Co., W. F., Chicago, Ill.
Hobart Bros. Co., Troy, Ohio
National Cylinder Gas Co., Chicago, Ill.
Progressive Welder Sales Co., Detroit, Mich.
Willys-Overland Motors, Inc., Toledo, Ohio

POSITIONERS

Acme Mfg. Co., Detroit, Mich.
Acro Welder Mfg. Co., Milwaukee, Wis.
Aronson Machine Co., Arcade, N. Y.
Bentley Welders, Inc., Syracuse, N. Y.
Bryant Products Distributing Co., Jackson, Mich.
Bunell Machine & Tool Co., Cleveland, Ohio
Cullen-Friestedt Co., Chicago, Ill.
Drennan, Inc., Lee J., Arcade, N. Y.
duMont Corp., The, Greenfield, Mass.
Eisler Engineering Co., Inc., Newark, N. J.
Garfield Engineering Corp., Kansas City, Mo.
General Welding Co., The, Cleveland, Ohio
Gouran, Mark F., Philadelphia, Pa.
Harnischfeger Corp., Milwaukee, Wis.
Johnson Machine Works, Eau Claire, Wis.
Lyon-Raymond Corp., Greene, N. Y.
McFerron-Myers Prod. Co., Cleveland, Ohio
Morton Mfg. Co., Muskegon Heights, Mich.
Pandjiris Weldment Co., St. Louis, Mo.
Peck, Cecil C., Co., Cleveland, Ohio
Ragle, J. M., Industries, Kansas City, Mo.
Ransome Div., Worthington Corp., Dunnellen, N. J.
Roylyn, Inc., Glendale, Calif.
Schrader, F. W., Co., Culver City, Calif.
Scientific Research Co., Portland, Ore.
Unique Turntable & Equipment Corp., Brooklyn, N. Y.
Victory Engineering & Machine Works, Inc., St. Louis, Mo.
Webb Corp., Webb City, Mo.
Welding Machines Mfg. Co., Detroit, Mich.
Will-Burt Co., Orrville, Ohio
Worthington Pump & Machinery Corp., Harrison, N. J.

PREHEATING EQUIPMENT, Portable, Electric

Eclipse Fuel Engineering Co., Rockford, Ill.
Electric Arc, Inc., Newark, N. J.
Falcon Equipment Co., New Brighton, Pa.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Mahr Mfg. Co., Div. of Diamond Iron Works, Inc., Minneapolis, Minn.

PYROMETERS

Bristol Co., The, Waterbury, Conn.
General Electric Co., Schenectady, N. Y.
Gordon, Claud S., Co., Chicago, Ill.
Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.
Richards, Arkley S., Co., Inc., Newton Highlands, Mass.
Weston Electrical Corp., Newark, N. J.

RADIOGRAPHIC FILMS

Ansco, Binghamton, N. Y.
du Pont de Nemours, E. I. & Co., Wilmington, Del.
Eastman Kodak Co., X-Ray Div., Rochester, N. Y.

RADIUM INSPECTION

(See also: "Inspection Equipment, Radium")

Bar-Ray Products Inc., Brooklyn, N. Y.
Canadian Radium & Uranium Corp., New York, N. Y.
Kelley-Koett Mfg. Co., The, Covington, Ky.
Radium Chemical Co., Inc., New York, N. Y.
St. John X-Ray Laboratories, Califon, N. J.

RAILING MATERIALS

Blum, Julius & Co., Inc., New York, N. Y.
Braun, J. G., Co. Chicago, Ill.
Stewart Iron Works Co., Inc., Cincinnati, Ohio

SOAPSTONE HOLDERS

Atlas Welding Accessories Co., Ferndale, Mich.
K-G Equip. Co., Inc., Allentown, Pa.
National Cylinder Gas Co., Chicago, Ill.
Ragle Industries, Kansas City, Mo.
Randall Mfg. Co., North Kansas City, Mo.

SOLDER PADDLES

Division Lead Co., Summit, Ill.
Porter, H. K., Inc., Somerville, Mass.

SOLDERING IRONS

Atlas Welding Accessories Co., Ferndale, Mich.
Bernz, Otto Co., Inc., Rochester, N. Y.
Century Aircraft, Los Angeles, Calif.
Chase Brass & Copper Co., Waterbury, Conn.
Dockson Corp., Detroit, Mich.
Electric Soldering Iron Co., Inc., Deep River, Conn.
Flux-All Chemical Products, New York, N. Y.
Goss Gas, Inc., Glenshaw, Pa.
Hexacon Electric Co., Roselle Park, N. J.
Insto-Gas Corp., Detroit, Mich.
Johnson Gas Appliance Co., Cedar Rapids, Iowa
Kemode Co., The, Inc., New York, N. Y.
Linde Air Products Company, a unit of Union Carbide and Carbon Corp., New York 17, N. Y.
Liquid Carbonic Corp., The, Chicago, Ill.
Mallory, P. R. & Co., Inc., Indianapolis, Ind.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Paul C. Roche Co., Inc., New York, N. Y.
Selas Corp. of America, Philadelphia, Pa.
Smith Welding Equipment Corp., Minneapolis, Minn.
Turner Brass Works, The, Sycamore, Ill.
Vulcan Electrical Co., Lynn, Mass.

SOLDERING IRON HANDLES

Atlas Welding Accessories Co., Ferndale, Mich.
Bernz, Otto Co., Inc., Rochester, N. Y.
Gallup-Ruffing Handle Co. The, Norwalk, Ohio
Imperial Brass Mfg. Co., The, Chicago, Ill.
Link, O. P., Handle Co., Salem, Ind.
Lutz File & Tool Co., Cincinnati, Ohio
Peck, Stow & Wilcox Co., Southington, Conn.
Sight Feed Generator Co., The, W. Alexandria, Ohio

SOLDERING IRONS, Electric

Atlas Welding Accessories Co., Ferndale, Mich.
Electric Soldering Iron Co., Inc., Deep River, Conn.
Flux-All Chemical Products, New York, N. Y.
General Electric Co., Schenectady, N. Y.
Hexacon Electric Co., Roselle Park, N. J.
Ideal Industries, Inc., Sycamore, Ill.
Kwikheat Mfg. Co., Glendale, Calif.
Mallory, P. R. & Co., Inc., Indianapolis, Ind.
Multi-Products Tool Co., Newark, N. J.
Sta-Warm Electric Co., Ravenna, Ohio
Vulcan Electric Co., Danvers, Mass.
Wassco Electric Products Corp., Peoria, Ill.

STABILIZER, Welding Electrode

(See: "Electrode Storage Ovens")

STAMPING DIES

Acromark Co., The, Elizabeth, N. J.
Dahlstrom Mfg. Co., St. Paul, Minn.
Die Typing Corp., Detroit, Mich.
Diener, Geo. W., Mfg. Co., Chicago, Ill.
Niagara Machine & Tool Works, Buffalo, N. Y.
O'Neill-Irwin Mfg. Co., Lake City, Minn.
Paine Co., The, Chicago, Ill.
Pyramid Steel Co., Cleveland, Ohio
Schwerdtle Stamp Co., The, Bridgeport, Conn.
Service Machine Co., Elizabeth, N. J.
Verson Allsteel Press Co., Chicago, Ill.
Vogel Tool & Die Corp., Melrose Park, Ill.
Warren Alloys, Pontiac, Mich.

TANK FITTINGS

Bastian-Blessing Co., The, Chicago, Ill.
Bonney Forge & Tool Works, Allentown, Pa.
Grinnell Co., Inc., Providence, R. I.
Ladish Co., Cudahy, Wis.
Lenape Hydraulic Press & Forging Co., West Chester, Pa.
Lukens Steel Co., Coatesville, Pa.
Midwest Piping & Supply Co., Inc., St. Louis, Mo.
Taylor Forge & Pipe Works, Chicago, Ill.
Welding Fittings Corp., New Castle, Pa.

TENSILE-TESTING EQUIPMENT

Air Reduction Sales Co., New York, N. Y.
Baldwin Locomotive Works, The, Philadelphia, Pa.
Buehler Ltd., Chicago, Ill.
Detroit Testing Machine Co., Detroit, Mich.
Dillon, W. C., & Co., Inc., Van Nuys, Calif.
Gordon, Claud S. Co., Chicago, Ill.
Independent Engineering Co., O'Fallon, Ill.
Poulsen-Webber Cordage Corp., New York, N. Y.
Precision Scientific Co., Chicago, Ill.
Riehle Testing Machine Div., American Machine and Metals, Inc., East Moline, Ill.
Steel City Testing Machines, Inc., Detroit, Mich.
Streeter-Amet Co., Chicago, Ill.

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TEMPERATURE-INDICATING CRAYONS

Atlas Welding Accessories Co., Ferndale, Mich.
Tempil Corp., New York, N. Y.

TEMPERATURE-INDICATING PAINTS

Gordon Co., Claud S., Chicago, Ill.
Metal & Thermit Co., New York, N. Y.
Midland Paint & Varnish Co., Cleveland, Ohio
Tempil Corp., New York, N. Y.

TEMPERATURE-INDICATING PELLETS

Atlas Welding Accessories Co., Ferndale, Mich.
Gordon Claud S. Co., Chicago, Ill.
Metal & Thermit Co., New York, N. Y.
Tempil Corp., New York, N. Y.

TEMPERATURE MEASURING EQUIPMENT

(See: "Pyrometers," also, "Temperature Indicating Pellets")

THERMIT EQUIPMENT and SUPPLIES

Metal & Thermit Corp., New York, N. Y.

TREPANNING TOOLS

Carboloy Dept. General Electric Co., Detroit, Mich.
Fibre Metal Products Co., Chester, Pa.
Flint Prod. Co., Brooklyn, N. Y.

TURNTABLES

Aronson Machine Co., Arcale, N. Y.
Unique Turntable & Equipment Corp., New York, N. Y.

WEDGE BARS

Allied Tractor & Steel Products Corp., Cleveland, Ohio
American Manganese Steel Div. of the American Brake Shoe Co., Chicago Heights, Ill.
American Oxygen Service Corp., Harrison, N. J.
Industrial Overlay Metals, Inc., Eaton, Ohio
Leetonia Tool Co., The, Leetonia, Ohio
Pyramid Steel Co., Cleveland, Ohio
Stulz-Sickles Co., Newark, N. J.

WELD BACK-UP RINGS

Arcos Corp., Philadelphia, Pa.
Commerce Pattern Foundry & Machine Co., Detroit, Mich.
General Ceramics Corp., Keasbey, N. J.
Grinnell Co., Inc., Providence, R. I.
Midwest Piping & Supply Co., Inc., St. Louis, Mo.
Oxo Welding Equip. Co., Chicago, Ill.
Riverside Machinery Co., Chicago, Ill.
Robvon Backing Ring & Fabricating Co., Portland, Ore.
Wedge Protectors, Inc., Cleveland, Ohio

WELDER TRAILERS

Air Reduction Sales Co., N. Y., N. Y.
General Electric Co., Schenectady, N. Y.
Hobart Bros. Co., The, Troy, Ohio
Westinghouse Electric Corp., Pittsburgh, Pa.

WELD NUTS

Grip Nut Co., Chicago, Ill.
Ohio Bolt & Nut Co., Berea, Ohio
Smith Bros. & Hughes, San Diego, Cal.

WELD-IDENTIFICATION HAMMERS

Acromark Co., Elizabeth, N. J.
Atlas Welding Accessories Co., Ferndale, Mich.

WELD INSPECTION EQUIPMENT

(See: "Inspection Equipment, Fluorescent," "Inspection Equipment, Magnetic-Particle etc.")

WELD-MEASURING GAGES

American Oxygen Service Corp., Harrison, N. J.
Chicago Tool & Engineering Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Harnischfeger Corp., Milwaukee, Wis.
Liquid Carbonic Corp., The Wall Chemicals Div., Chicago, Ill.
Metro Manufacturing Co., Long Island City, N. Y.
Nageldinger & Son, J., Inc., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Superior Oxy-Acetylene Mach. Co., Hamilton, Ohio
Victor Equipment Co., San Francisco, Calif.
Weldit, Inc., Detroit, Mich.
Westinghouse Elec. Corp., Pittsburgh, Pa.

WELD THROUGH SEALERS

Dayton Chemical Prod. Lab., Inc., West Alexandria, Ohio
Key Co., E. St. Louis, Ill.
Northeast Metals Co., Philadelphia, Pa.
Presstite Engineering Co., St. Louis, Mo.

WELD-TIME RECORDERS

Brush Development Co., The, Cleveland, Ohio
Harnischfeger Corp., Milwaukee, Wis.
Hewlett-Packard Co., Palo Alto, Calif.
Rubicon Co., Philadelphia, Pa.

WELDING FITTINGS

Bonney Forge & Tool Works, Allentown, Pa.
Bridgeport Brass Co., Bridgeport, Conn.
Cooper Alloy Foundry Co., The, Hillside, N. J.
Crane Co., Chicago, Ill.
Globe Steel Tubes Co., Milwaukee, Wis.
Grinnell Co., Inc., Providence, R. I.
Ladish Co., Cudahy, Wis.
Lenape Hydraulic Press & Forging Co., West Chester, Pa.
Midwest Piping & Supply Co., Inc., St. Louis, Mo.
Northern Indiana Brass Co., Elkhart, Ind.
Taylor Forge & Pipe Works, Chicago, Ill.
Tube Turns, Inc., Louisville, Ky.
Walworth Co., New York, N. Y.
Watson-Stillman Co., Roselle, N. J.
Welding Fittings Corp., New Castle, Pa.

WELDING FLANGES

Bonney Forge & Tool Works, Allentown, Pa.
Crane Co., Chicago, Ill.
Globe Steel Tubes Co., Milwaukee, Wis.
Grinnell Co., Inc., Providence, R. I.
Harrisburg Steel Corp., Harrisburg, Pa.
Ladish Co., Cudahy, Wis.
Midwest Piping & Supply Co., Inc., St. Louis, Mo.
Taylor Forge & Pipe Works, Chicago, Ill.
Tri-Clover Machine Co., Kenosha, Wis.
Tube Turns, Inc., Louisville, Ky.
Vogt, Henry, Machine Co., Louisville, Ky.
Walworth Co., New York, N. Y.
Watson-Stillman Co., Roselle, N. J.

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Diamonite Prods. Div., The U. S. Quarry Tile Co., Canton, Ohio

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UNITED STATES CERAMIC TILE COMPANY
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WELDING POSITIONERS

(See: "Positioners")

WELDING SCHOOLS

All-State Welding Alloys Co., Inc., White Plains, N. Y.
Cleveland School for Welding, Cleveland, Ohio
Eutectic Welding Alloys Corp., Flushing, N. Y.
Greer Shop Training, Chicago, Ill.
Hobart Bros. Co., The, Troy, Ohio
Lincoln Electric Co., Cleveland, Ohio
Milwaukee School of Engineering, Milwaukee, Wis.
Utilities Engineering Institute, Chicago, Ill.

WELDING TABLES

Aronson Machine Co., Arcade, N. Y.
Bentley Weldery, Inc., Syracuse, N. Y.
Challenge Machinery Co., The, Grand Haven, Mich.
Chicago Hardware Foundry Co., North Chicago, Ill.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Federal Tool Engineering Co., Cedar Grove, N. J.
Grand Specialties Co., Chicago, Ill.
Graves, Ed. J., Jamestown, N. Y.
Hamilton Tool Co., The, Hamilton, Ohio
Harnischfeger Corp., Milwaukee, Wis.
Hobart Bros., Co., Troy, Ohio
Papec Machine Co., Shortsville, N. Y.
Peck, Cecil C., Co., Cleveland, Ohio
Victor Equipment Co., San Francisco, Calif.
Wiese Plow Welding Co., Perry, Iowa
Worthington Corp., Dunellen, N. J.

X-RAY AND RADIUM PROTECTION

Bar-Ray Products, Inc., Brooklyn, N. Y.
Canadian Radium & Uranium Corp., New York, N. Y.
Division Lead Co., Summit, Ill.
General Electric Co., X-Ray Dept., Milwaukee, Wis.
Industrial Products Co., Philadelphia, Pa.
Kelley-Koett Mfg. Co., Covington, Ky.
Ray Proof Corp., New York, N. Y.
St. John X-Ray Laboratories, Califon, N. J.
Westinghouse Electric Corp., Pittsburgh, Pa.

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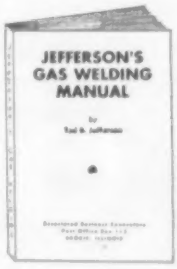
by Ted B. Jefferson



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Not only do these items include the protective equipment worn by the weldor, but also that equipment used to provide fire protection where welding activities are carried on.

Those welding supply houses which distribute gases have found that medical-therapy equipment is a natural adjunct to their gas business, since oxygen is such an important medical item.

The medical and safety equipment classification carries index numbers 900-999. Here again, Fact File presents these items alphabetically, while NWSA divides them into categories carrying the following headings:

910 Protective clothing
920 Gloves
930 Eye, face and head
940 Fire protection
950 First aid
960 Medical therapy
980 Miscellaneous

ANTI-FOG COMPOUNDS

Allen Optical Co., Buffalo, N. Y.
American Optical Co., Southbridge, Mass.
Bausch & Lomb Optical Co., Rochester, N. Y.
Carhoff Co., Cleveland, Ohio
Industrial Products Co., Philadelphia, Pa.
Master Co., Los Angeles, Calif.
McDonald Co., B. F., Los Angeles, Calif.
Merix Chemical Co., Chicago, Ill.
Milburn Co., Detroit, Mich.
Mine Safety Appliances Co., Pittsburgh, Pa.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Safety Clothing & Equipment Co., Cleveland, Ohio

APRONS, Asbestos, Fire Resistant Duck & Leather

A & A Mfg. Co., Milwaukee, Wis.
Advance Glove Mfg. Co., Detroit, Mich.
Aljay Manufacturing Co., Inc., Philadelphia, Pa.
American Optical Co., Southbridge, Mass.
Bond, Charles, Co., Philadelphia, Pa.
Boyer-Campbell Co., The, Detroit, Mich.
Chicago Eye Shield Co., Chicago, Ill.
Chicago Rawhide Mfg. Co., The, Chicago, Ill.
Daniels, C. R., Inc., 75 West St., New York, N. Y.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Elliott Glove, Inc., Oconto, Wis.
Fibre Metal Prod. Co., Chester, Pa.
General Scientific Equipment Co., Philadelphia, Pa.
Genter, C. D. & Co., Chattanooga, Tenn.
Greene, Tweed & Co., North Wales, Pa.
Holcomb Safety Garment Co., Chicago, Ill.
Industrial Gloves Co., Danville, Ill.
Industrial Products, Co., Philadelphia, Pa.
Janos Asbestos Co., Philadelphia, Pa.
Johns-Manville Co., New York, N. Y.
Keasbey & Mattison Co., Ambler, Pa.
Kimball Safety Prod. Co., Cleveland, Ohio
Manhatten Rubber Div., Raybestos Manhatten Inc., Passaic, N. J.

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Olympic Glove Co., Inc., The, New York, N. Y.
Pulmosan Safety Equip. Co., Brooklyn, N. Y.
Racine Glove Co., Inc., Rio, Wis.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Singer Glove Mfg. Co., Chicago, Ill.
Standard Safety Eqpt. Co., Chicago, Ill.
Streichert, E. J., Chicago, Ill.
Tillman & Co., John, Long Beach, Calif.
Universal Leather Co., Inc., Berlin, Wis.
Wheeler Protective Apparel, Inc., Chicago, Ill.
Wickman Glove Co., Berkeley, Calif.

CANVAS COVERS

Candy Belting Co., Grand Rapids, Mich.
General Scientific Equip. Co., Philadelphia, Pa.
Kimball Safety Prod. Co., Cleveland, Ohio
Paulsen-Webber Cordage Corp., New York, N. Y.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Upson-Walton Co., The, Cleveland, Ohio

CAPES, BIBS and SLEEVES, Asbestos Fire Resistant and Duck and Leather

Advance Glove Mfg. Co., Detroit, Mich.
Air Reduction Sales Co., N. Y., N. Y.
Aljay Manufacturing Co., Inc., Philadelphia, Pa.
American Optical Co., Southbridge, Mass.
Boyer-Campbell Co., The, Detroit, Mich.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Fibre-Metal Products Co., The, Chester, Pa.
General Scientific Equip. Co., Philadelphia, Pa.
Genter, C. D. & Co., Chattanooga, Tenn.
Holcomb Safety Garment Co., Chicago, Ill.
Industrial Gloves Co., Danville, Ill.
Industrial Products Co., Philadelphia, Pa.
Johns-Manville, New York, N. Y.
Keasbey & Mattison Co., Ambler, Pa.
Kimball Safety Prod. Co., Cleveland, Ohio
Mine Safety Appliances Co., Pittsburgh, Pa.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago, Ill.
Olympic Glove Co., Inc., The, New York, N. Y.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Racine Glove Co., Inc., Rio, Wis.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Singer Glove Mfg. Co., Chicago, Ill.
Streichert, E. J., Chicago, Ill.
Tillman & Co., John, Long Beach, Calif.
Universal Leather Co., Berlin, Wis.
Wheeler Protective Apparel, Inc., Chicago, Ill.
Wickman Glove Co., Berkeley, Calif.

COAT, LEATHER
Asbestos, Fire-Resistant Duck

Aljay Mfg. Co., Inc., Philadelphia, Pa.
American Optical Co., Southbridge, Mass.
Boyer-Campbell Co., Detroit, Mich.
Bullard Co., E. D., San Francisco, Calif.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Elliott Glove Co., Inc., Oconto, Wis.
Fibre-Metal Products Co., The, Chester, Pa.
General Scientific Equipment Co., Philadelphia, Pa.
Genter, C. D. & Co., Chattanooga, Tenn.
Greene, Tweed & Co., North Wales, Pa.
Holcomb Safety Garment Co., Chicago, Ill.
Industrial Gloves Co., Danville, Ill.
Industrial Products Co., Philadelphia, Pa.
Janos Asbestos Co., New York, N. Y.
Johns-Manville, New York, N. Y.
Keasbey & Mattison Co., Ambler, Pa.
Kimball Safety Prod. Co., Cleveland, Ohio
McDonald, B. F., Los Angeles, Calif.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Olympic Glove Co., Inc., The, New York, N. Y.
Pulmosan Safety Equip. Co., Brooklyn, N. Y.
Racine Glove Co., Inc., Rio, Wisc.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Singer Glove Mfg. Co., Chicago, Ill.
Standard Safety Equip. Co., Chicago, Ill.
Streichert, E. J. Chicago, Ill.
Tillman Co., John, Long Beach, Calif.
Universal Leather Co., Inc., Berlin, Wis.
Wheeler Protective Apparel, Inc., Chicago, Ill.
Wickman Glove Co., Berkeley, Calif.

CLOTHING, Safety

(See specific item desired, such as "Aprons," "Caps," etc.)

COMPOUNDS, for Fire Extinguishers

Carbide and Carbon Chemicals Corp., Unit of Union Carbide and Carbon Corp., New York, N. Y.
Diener, Geo. W., Mfg. Co., Chicago, Ill.
Pyrene Manufacturing Co., Newark, N. J.

COVER LENSES

Allied Weld-Craft, Inc., Indianapolis, Ind.
American Industrial Safety Equip. Co., Cleveland, Ohio
American Optical Co., Southbridge, Mass.
Arcos Corp., Philadelphia, Pa.
Atlas Welding Accessories Co., Ferndale, Mich.
Bache, Semon & Co., New York, N. Y.
Bausch & Lomb Optical Co., Rochester, N. Y.
Boyer-Campbell Co., Detroit, Mich.
Bullock Co., L. H., Richmond, Calif.
Burdett Oxygen Co., Cleveland, Ohio
Chicago Eye Shield Co., Chicago, Ill.
Dockson Corp., Detroit, Mich.
Dunn Products, Chicago, Ill.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Electro Cover Glass Co., Inc., Pittsburgh, Pa.
Ergolyte Mfg. Co., Philadelphia, Pa.
Faulk, F. R., Pittsburgh, Pa.
Fendall Co., Chicago, Ill.
Fibre-Metal Products Co., The, Chester, Pa.
Flood Safety Products Co., Chicago, Ill.
General Scientific Equipment Co., Philadelphia, Pa.
Harris Welding Equipment Co., Chicago, Ill.
Industrial Products Co., Philadelphia, Pa.
Kedman Co., Salt Lake City, Utah
Kimball Safety Prod. Co., Cleveland, Ohio
Metro Mfg. Co., L. I. City, N. Y.
Mine Safety Appliances Co., Pittsburgh, Pa.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Olympic Glove Co., Inc., The, New York, N. Y.
Parker Safety Equipment Co., Irvington, N. J.
Pennsylvania Optical Co., Reading, Pa.
Pulmosan Safety Equip. Corp., Brooklyn, N. Y.
Ragle, J. M. Industries, Kansas City, Mo.
Safety Clothing & Equip. Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Sellstrom Mfg. Co., Palatine, Ill.
Shrader, F. W., Co., Culver City, Calif.
Thermacote Co., Los Angeles, Calif.
Victor Equipment Co., San Francisco, Calif.
Welding Alloys Mfg. Co., Newark, N. J.
Welsh Mfg. Co., Providence, R. I.
Willson Products, Inc., Reading, Pa.

COLLECTORS, EXHAUSTERS and BLOWER SYSTEMS

Aget-Detroit Co., Ann Arbor, Mich.
American Air Filter Co., Inc., Louisville, Ky.
American Blower Corp., Dearborn, Mich.
American Wheelabrator and Equipment Corp., Mishawaka, Ind.
Buffalo Forge Co., Buffalo, N. Y.
Champion Blower and Forge Co., Lancaster, Pa.
DeBothezat Fans Div., American Machine and Metals, Inc., East Moline, Ill.
Delta Power Tool Div., Rockwell Mfg. Co., Milwaukee, Wis.
Engwald Corp., Brooklyn, N. Y.
General Blower Co., Morton Grove, Ill.
Hammond Machinery Builders, Inc., Kalamazoo, Mich.
Ilg Electric Ventilating Co., Chicago, Ill.
Mine Safety Appliances Co., Pittsburgh, Pa.
Paasche Airbrush Co., Chicago, Ill.
Pangborn Corp., Hagerstown, Md.
Ruemelin Mfg. Co., Milwaukee, Wis.
Schmieg Industries, Inc., Detroit, Mich.
Standard Electrical Tool Co., The, Cincinnati, Ohio
Sturtevant, B. F., Co., Division of Westinghouse Electric, Hyde Park, Boston, Mass.
Torit Manufacturing Co., St. Paul, Minn.
Whiting Corp., Harvey, Ill.

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Eastern Equipment Co., Inc., Willow Grove, Pa.
Elliott Glove Co., Inc., Oconto, Wis.
Frommelt Industries, Dubuque, Iowa
General Scientific Equip. Co., Phila. Pa.
Genter, C. D. & Co., Chattanooga, Tenn.
Holcomb Safety Garment Co., Chicago, Ill.
Industrial Gloves Co., Danville, Ill.
Industrial Products Co., Philadelphia, Pa.
Janos Asbestos Co., New York, N. Y.
Johns-Manville, New York, N. Y.
Keasbey & Mattison Co., Ambler, Pa.
Kimball Safety Prod. Co., Cleveland, Ohio
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Pulmosan Safety Equip. Co., Brooklyn, N. Y.
Racine Glove Co., Inc., Rio, Wis.
Raybestos-Manhattan, Inc., Passaic, N. J.
Safety Clothing & Equipment Co. Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Singer Glove Mfg. Co., Chicago, Ill.
Standard Safety Equipment Co., Chicago, Ill.
Wheeler Protective Apparel, Inc., Chicago, Ill.

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(See: "Leak Detectors")

DUST COLLECTORS

(See "Collectors, Exhausters and Blower Systems")

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American Optical Co., Southbridge, Mass.
DeVilbiss Co., The, Toledo, Ohio
Dockson Corp., Detroit, Mich.
Genter, C. D. Co., Chattanooga, Tenn.
Goodrich, B. F., Co., The, Akron, Ohio
Industrial Products Co., Philadelphia, Pa.
McDonald, B. F., Co., Los Angeles, Calif.
Mine Safety Appliances Co., Pittsburgh, Pa.
Paasche Airbrush Co., Chicago, Ill.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Sciaky Bros., Inc., Chicago, Ill.
Standard Safety Equipment Co., Chicago, Ill.
Willson Prod., Inc., Reading, Pa.

EAR PROTECTORS, Weldors'

Aljay Manufacturing Co., Inc., Philadelphia, Pa.
Eastern Equipment Co., Inc., Willow Grove, Pa.
General Scientific Equip. Co., Philadelphia, Pa.
Genter, C. O., Co., Chattanooga, Tenn.
Kimball Safety Prod. Co., Cleveland, Ohio
McDonald Co., B. F., Los Angeles, Calif.
Mine Safety Appliances Co., Pittsburgh, Pa.
Pulmosan Safety Equipment Co., Brooklyn, N. Y.
Safety Clothing & Equipment Co., Cleveland, Ohio
Standard Safety Equipment Co., Chicago, Ill.
Willson Products, Inc., Reading, Pa.

EXHAUST FANS

Air Controls, Inc., Cleveland, Ohio
American Blower Corp., Dearborn, Mich.
Autovent Fan & Blower Div. The Herman Nelson Corp., Chicago, Ill.
Baldor Electric Co., St. Louis, Mo.
Chelsea Fan & Blower Co., Inc., Plainfield, N. J.
Clarage Fan Co., Kalamazoo, Mich.
Coppus Engineering Corp., Worcester, Mass.
DeBothezat Fans Div., American Mach. & Metals, Inc., East Moline, Ill.
De Vilbiss Co., The, Toledo, Ohio
Eagle-Picher Co., The, Cincinnati, Ohio.
Electric Blower Co., Boston, Mass.
Elliott Mfg. Co., Binghamton, N. Y.
Engwald Corp., Brooklyn, N. Y.
General Blower Co., Morton Grove, Ill.
Hisey-Wolf Machine Co., Cincinnati, Ohio.
Ilg Electric Ventilating Co., Chicago, Ill.
Jeffrey Mfg. Co., The, Columbus, Ohio.
Joy Mfg. Co., Pittsburgh, Pa.
MacLeod Co., The, Cincinnati, Ohio.
Nelson, Herman, Div., American Air Filter Co., Inc., Moline, Ill.
Paasche Airbrush Co., Chicago, Ill.
Robbins & Myers, Inc., Springfield, Ohio
Ruemelin Mfg. Co., Milwaukee, Wisc.
Sturtevant, B. F., Co., Division of Westinghouse Electric, Hyde Park, Boston, Mass.
Swartwout Co., The, Cleveland, Ohio.
Torit Mfg. Co., St. Paul, Minn.
Victor Electric Products, Inc., Cincinnati, Ohio.

EYE DROPS

Ashton's Pharmacist, Youngstown, Ohio.
Atlas Welding Accessories Co., Ferndale, Mich.
Carhoff Co., Cleveland, Ohio.
Detroit First Aid Company, Detroit, Mich.
General Scientific Equipment Co., Philadelphia, Pa.
Murine Co., Chicago, Ill.
Safety Clothing & Equipment Co., Cleveland, Ohio

FACE SHIELDS, Arc Welding

(See also: "Arc Welding Helmets")

American Industrial Safety Equipment Co., Cleveland, Ohio.
American Optical Co., Southbridge, Mass.
Boyer-Campbell Co., Detroit, Mich.
Chicago Eye Shield Co., Chicago, Ill.
Davis Emergency Equip. Co., Inc., Newark, N. J.
Dockson Corp., Detroit, Mich.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Eastern Safety Equipment Co., New York, N. Y.
Ergolyte Mfg. Co., Philadelphia, Pa.

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- scientific upward ventilation
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WELDING HELMETS, FACE SHIELDS & ACCESSORIES
Kedman Co., 233 So. 5th West, Salt Lake City 1, Utah

Fendall Co., Chicago, Ill.
Fibre-Metal Prod. Co., The, Chester, Pa.
Flood Safety Products Co., Chicago, Ill.
General Scientific Equip. Co., Philadelphia, Pa.
Glendale Optical Co., Inc., Copiague, N. Y.
Hobart Bros. Co., The, Troy, Ohio.
Industrial Products Co., Philadelphia, Pa.
Jackson Products Co., Warren, Mich.
Kedman Co., Salt Lake City, Utah.
K-G Welding and Cutting Co., New York, N. Y.
Kimball Safety Prod. Co., Cleveland, Ohio.
Lincoln Electric Co., The, Cleveland, Ohio.
Metro Mfg. Co., Long Island City, N. Y.
Mine Safety Appliances Co., Pittsburgh, Pa.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Parker Safety Equipment Co., Irvington, N. J.
Pennsylvania Optical Co., Reading, Pa.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Rail Supply Co., New York, N. Y.
Safety Clothing & Equipment Co., Cleveland, Ohio.
Safety First Supply Co., Pittsburgh, Pa.
Sellstrom Mfg. Co., Palatine, Ill.
Standard Safety Equipment Co., Chicago, Ill.
Universal Welder Corp., Cleveland, Ohio.
Victor Equipment Co., San Francisco, Calif.
Welsh Mfg. Co., Providence, R. I.
Wheeler, F. H. Mfg. Co., Chicago, Ill.
Willson Products, Inc., Reading, Pa.

Dockson Face Shields

Built for Better Service

. . . a complete line of dependable head and eye protection. Made right—priced right—proved right.

DOCKSON CORPORATION
3837 Wabash Detroit 8, Mich.

FIBRE, Sheets and Tubes

Fibre-Metal Products Co., The, Chester, Pa.
Flood Safety Products Co., Chicago, Ill.
Sellstrom Mfg. Co., Palatine, Ill.
Owens-Corning Fiberglas Corp., Toledo, Ohio
Westinghouse Electric Corp., Pittsburgh, Pa.
Wilmington Fibre Specialty Co., Wilmington, Del.

FINGER GUARDS

A & A Mfg. Co., Milwaukee, Wis.
American Optical Co., Southbridge, Mass.
Boyer-Campbell Co., Detroit, Mich.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Eastern Safety Equipment Co., New York, N. Y.
Holcomb Safety Garment Co., Chicago, Ill.
Industrial Products Co., Philadelphia, Pa.
Olympic Glove Co., Inc., The, New York, N. Y.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Safety Clothing & Equip. Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Standard Safety Equipment Co., Chicago, Ill.
Victor Equipment Co., San Francisco, Calif.
Wheeler, F. H., Mfg. Co., Chicago, Ill.

FIRE EXTINGUISHERS

Allen, W. D., Mfg. Co., Chicago, Ill.
American-LaFrance-Foamite Corp., Elmira, N. Y.
American Oxygen Service Corp., Harrison, N. J.
Ansul Chemical Co., Marinette, Wis.
Bowser, Inc., Fort Wayne, Ind.
Buffalo Fire Appliance Corp., Dayton, Ohio.
Burdett Oxygen Co., Cleveland, Ohio
C-O Two Fire Equipment Co., Newark, N. J.
Diener, Geo. W., Mfg. Co., Chicago, Ill.
General Detroit Corp., The, Detroit, Mich.
Justrite Mfg. Co., Chicago, Ill.
Kidde, Walter, & Co., Inc., Belleville, N. J.
Miller-Peerless Mfg. Co., Chicago, Ill.
National Powder Extinguisher Corp., New York, N. Y.
Parker, Inc., W. D., New York, N. Y.
Pressurelube, Inc., New York, N. Y.
Pulmosan Safety Equipment Co., Brooklyn, N. Y.
Pyrene Manufacturing Co., Newark, N. J.
Randolph Laboratories, Chicago, Ill.
Raybestos-Manhattan, Inc., Passaic, N. J.
Stop-Fire, Inc., Brooklyn, N. Y.

FIRE HOSE

Boston Woven Hose & Rubber Co., Boston, Mass.
Gates Rubber Co., The, Denver, Colo.
Goodall Rubber Co., Trenton, N. J.
Goodrich, B. F., Co., The, Akron, Ohio
Goodyear Tire & Rubber Co., Inc., Akron, Ohio
Hewitt Rubber Div., Hewitt-Robins, Inc., Buffalo, N. Y.
Home Rubber Co., The, Trenton, N. J.
New York Belting & Packing Co., Passaic, N. J.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y
Quaker Rubber Corp., Philadelphia, Pa.
Raybestos-Manhattan, Inc., Passaic, N. J.
Republic Rubber Division, Lee Rubber and Tire Corp., Youngstown, Ohio
Thermoid Rubber, Division of Thermoid Co., Trenton, N. J.

FIRE RETARDANTS (For Flame-Proofing Clothing, Etc.)

American-LaFrance-Foamite Corp., Elmira, N. Y.
Croton Chemical Corp., New York, N. Y.
E. I. DuPont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
Holcomb Safety Garment Co., Chicago, Ill.
Quaker Chemical Products Corp., Conshohocken, Pa.
Wayne Chemical Products Co., Detroit, Mich.

FIRST AID KITS

American Allsafe Co., Inc., Buffalo, N. Y.
Bullard, E. D., Co., San Francisco, Calif.
Carter-Lockard Co., Los Angeles, Calif.
Davis Emergency Equip. Co., Inc., Newark, N. J.
Eastern Safety Equipment Co., New York, N. Y.
General Scientific Equip. Co., Philadelphia, Pa.
Industrial Products Co., Philadelphia, Pa.
McDonald Co., B. F., Los Angeles, Calif.
Mine Safety Appliances Co., Pittsburgh, Pa.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Safety Clothing & Equip Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Standard Safety Equip Co., Chicago, Ill.

FLASH PREVENTIVE

Acme Lead & Color Works, Detroit, Mich.
General Scientific Equip. Co., Philadelphia, Pa.
Milburn Co., Detroit, Mich.
Oakite Products, Inc., New York, N. Y.
Wayne Chemical Prod. Co., Detroit, Mich.
Wolfe-Kote Co., Sheboygan, Wis.
York Engineering Co., Chicago, Ill.

FUME COLLECTORS & REMOVERS

(See: "Ventilating Apparatus" and "Collectors, Blowers and Exhaust Systems")

GAS EXHAUSTERS

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
Buffalo Forge Co., Buffalo, N. Y.
Chelsea Fan & Blower Co., Inc., Plainfield, N. J.
Clarage Fan Co., Kalamazoo, Mich.
Engwald Corp., Brooklyn, N. Y.
General Blower Co., Morton Grove, Ill.
Paasche Airbrush Co., Chicago, Ill.
Roots-Connersville Blower Corp., Connersville, Ind.
Sturtevant, B. F., Co., Division of Westinghouse Electric, Hyde Park, Boston, Mass.
Torit Mfg. Co., St. Paul, Minn.
Worthington Pump & Machinery Corp., Harrison, N. J.

GLASS, Cover

(See: "Cover Lenses")

Manufacturers of face and eye protection. Welders' helmets, shields, goggles and lens.

Sellstrom Mfg. Co.

226 Hicks Road
Palatine, Ill.

GLASS LENSES

Air Reduction Sales Co., New York, N. Y.
American Optical Co., Southbridge, Mass.
Atlas Welding Accessories Co., Ferndale, Mich.
Bache, Semon & Co., New York, N. Y.
Bausch & Lomb Optical Co., Rochester, N. Y.
Bullock, L. H. Co., Richmond, Calif.
Burdett Oxygen Co., Cleveland, Ohio
Dockson Corp., Detroit, Mich.
Eastern Equip. Co., Inc., Willow Grove, Pa.
Eastman Kodak Co., Rochester, N. Y.
Fendall Co., Chicago, Ill.
Fibre-Metal Products Co., The, Chester, Pa.
Flood Safety Prod. Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Industrial Products Co., Philadelphia, Pa.
Kedman Co., Salt Lake City, Utah
Kimball Safety Prod. Co., Cleveland, Ohio
Linde Air Products Company, a unit of Union Carbide and Carbon Corp., New York 17, N. Y.
Metal & Thermit Corp., N. Y. 17, N. Y.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago, Ill.
Pennsylvania Optical Co., Reading, Pa.

LINCOLN WELDING LENSES

Premium Quality at Low Price

"Super-Visibility" The safest, most preferred protective lens available. Gives maximum protection with minimum eye strain. Available in any shade.

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Dept. 713 Cleveland 17, Ohio

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Pulmosan Safety Equip. Corp., Brooklyn, N. Y.
Safety Clothing & Equip. Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Sciaky Bros., Inc., Chicago, Ill.
Sellstrom Mfg. Co., Palatine, Ill.
Smith, A. O., Corp., Milwaukee, Wis.
Thermacote Welding Prods. Inc., Newark, N. J.
Trindl Prod., Ltd., Chicago, Ill.
Welding Alloys Mfg. Co., Newark, N. J.
Willson Products, Inc., Reading, Pa.
Wooldridge Aluminum Welding Prod., Malden, Mass.

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DEERSKIN & COWHIDE
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JOHN TILLMAN & CO.
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A & A Mfg. Co., Milwaukee, Wis.
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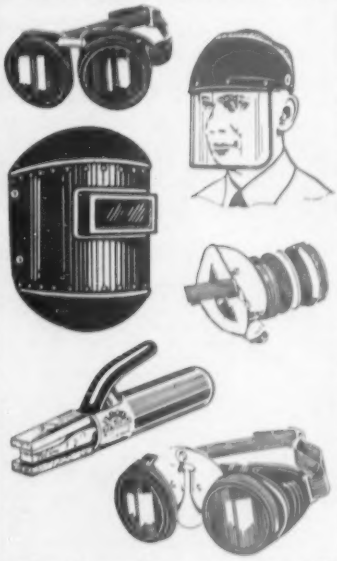
Air Reduction Sales Co., New York, N. Y.
Aljoy Manufacturing Co., Inc., Philadelphia, Pa.
American Industrial Safety Equip. Co., Cleveland, Ohio
American Optical Co., Southbridge, Mass.
Boss Mfg. Co., The, Kewanee, Ill.
Boyer-Campbell Co., Detroit, Mich.
Burdett Oxygen Co., Cleveland, Ohio
Candor Glove Co., The, Candor, N. Y.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Elliott Glove Co., Inc., Oconto, Wis.
Fibre-Metal Products Co., The, Chester, Pa.
General Electric Co., Schenectady, N. Y.
General Scientific Equip. Co., Philadelphia, Pa.
Genter, C. D. & Co., Chattanooga, Tenn.
Greene, Tweed & Co., North Wales, Pa.
Hammond Associates, Inc., New York, N. Y.
Hanover Glove Co., Inc., Hanover, Pa.
Holcomb Safety Garments Co., Chicago, Ill.
Imperial Glove Mfg. Co., Berlin, Wis.
Industrial Gloves Co., Danville, Ill.
Industrial Products Co., Philadelphia, Pa.
Janos Asbestos Co., New York, N. Y.
Johns-Manville, New York, N. Y.
Keasbey & Mattison Co., Ambler, Pa.
Kimball Safety Prod. Co., Cleveland, Ohio
Kirschner Gloves, Inc., Oconto, Wis.
Kriewalt Specialty Mfg. Co., Oconto, Wis.
Linde Air Products Company, A Unit of the Union Carbide and Carbon Corp., New York 17, N. Y.
Liquid Carbonic Corp., The, Chicago, Ill.
Metal & Thermit Corp., N. Y. 17, N. Y.
Milburn Co., Detroit, Mich.
Mine Safety Appliances Co., Pittsburgh, Pa.
Montpelier Glove Co., Montpelier, Ind.
National Cylinder Gas Co., Chicago, Ill.
Olympic Glove Co., Inc., The, New York, N. Y.
Perfect Glove Co., Inc., Milwaukee, Wis.
Pulmosan Safety Equip. Co., Brooklyn, N. Y.
Racine Glove Co., Inc., Rio, Wis.
Ragle Industries, J. M., Kansas City, Mo.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Singer Glove Mfg. Co., Chicago, Ill.
Streichert, E. J., Chicago, Ill.
Tillman & Co., John, Long Beach, Calif.
Universal Leather Co., Berlin, Wis.
Wheeler Protective Apparel, Inc., Chicago, Ill.
Wickman Glove Co., Berkeley, Calif.

GOGGLE CLEANERS

Allen Optical Co., Seni Spray Div., Buffalo, N. Y.
American Optical Co., Southbridge, Mass.
Boyer-Campbell Co., The, Detroit, Mich.
Burdett Oxygen Co., Cleveland, Ohio
General Scientific Equip. Co., Philadelphia, Pa.
Mine Safety Appliances Co., Pittsburgh, Pa.
Oakite Prod. Inc., New York, N. Y.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Standard Safety Equip. Co., Chicago, Ill.
Watchemoket Optical Co., Inc., Providence, R. I.
Welkins Co., Inc., Cortland, N. Y.

1000-HOUR (CAST PLASTIC) WELDER'S COVER LENS
First introduced to U.S. trade by Flood.

You Cannot Buy—
BETTER QUALITY DURABILITY OR COMFORT IN HELMETS GOGGLES OR WELDING ACCESSORIES



Flood's products, known all over the world, include:

1000-HOUR COVER LENS

WELDERS' HELMETS	SUPER PLATE FILTER LENS
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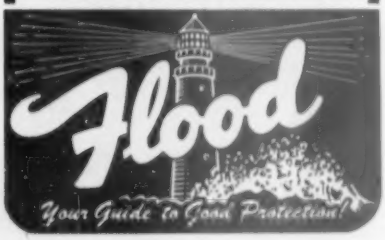

GOGGLES, Chippers', Cover, Spectacle Type with Side Shield, and Welding

American Allsafe Co., Inc., Buffalo, N. Y.
American Industrial Safety Equipment Co., Cleveland, Ohio
American Optical Co., Southbridge, Mass.
Bausch & Lomb Optical Co., Rochester, N. Y.
Boyer-Campbell Co., The, Detroit, Mich.
Bullock, L. H., Co., Richmond, Calif.
Burdett Oxygen Co., Cleveland, Ohio
Central Steel and Wire Co., Chicago, Ill.
Chicago Eye Shield Co., Chicago, Ill.
Davis Emergency Equip. Co., Inc., Newark, N. J.
Dockson Corp., Detroit, Mich.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Eastern Safety Equipment Co., New York, N. Y.
Electric Eye Equipment Co., Danville, Ill.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Fendall Co., Chicago, Ill.
Flood Safety Products Co., Chicago, Ill.
General Scientific Equip. Co., Philadelphia, Pa.
Glendale Optical Co., Inc., Copiague, N. Y.
Goggle Parts Co., Cleveland, Ohio
Industrial Products Co., Philadelphia, Pa.
Jackson Products, Warren, Mich.
K-G Equipment Co., Allentown, Pa.
Kimball Safety Prod. Co., Cleveland, Ohio
Liquid Carbonic Corp., The, Well Chem. Div., Chicago, Ill.
Metro Mfg. Co., L. I. City, N. Y.
Milburn, Alexander, Inc., Baltimore, Md.
Mine Safety Appliances Co., Pittsburgh, Pa.
Modern Engineering Co., Inc., St. Louis, Mo.
National Welding Equipment Co., San Francisco, Calif.
Olympic Glove Co., Inc., The, New York, N. Y.
Parker Safety Equip. Corp., Irvington, N. J.
Pennsylvania Optical Co., Reading, Pa.
Pulmosan Safety Equip. Corp., Brooklyn, N. Y.
Safety Clothing & Equip. Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Sellstrom Mfg. Co., Palatine, Ill.
Smith, A. O., Corp., Milwaukee, Wis.
Standard Safety Equip. Co., Chicago, Ill.
Superior Oxy-Acetylene Mach. Co., Hamilton, Ohio
Thermacote Co., Los Angeles, Calif.
Thermacute Welding Prod. Co., Newark, N. J.
Trex Engineering Supply Co., Newark, N. J.
United States Safety Service Co., Kansas City, Mo.
Universal Power Corp., Cleveland, Ohio
Univis Lens Co., The, Dayton, Ohio
Victor Equipment Co., San Francisco, Calif.
Wallace Optical Co., Inc., Detroit, Mich.
Watchemoket Optical Co., Inc., Providence, R. I.
Welding Alloys Mfg. Co., Newark, N. J.
Welsh Mfg. Co., Providence, R. I.
Willson Products, Inc., Reading, Pa.

Goggle #610

Manufacturers of face and eye protection. Welders' helmets, shields, goggles and lens.

Sellstrom Mfg. Co.
226 Hicks Road
Palatine, Ill.

GOGGLE and HELMET LENSES

Air Reduction Sales Co., New York, N. Y.
American Agile Corp., Cleveland, Ohio
American Industrial Safety Equip. Co., Cleveland, Ohio
American Optical Co., Southbridge, Mass.
Bache, Semon & Co., New York, N. Y.
Bausch & Lomb Optical Co., Rochester, N. Y.
Bullard, E. D., Co., San Francisco, Calif.
Bullock, L. H., Co., Richmond, Cal.
Burdett Oxygen Co., Cleveland, Ohio
Chicago Eye Shield Co., Chicago, Ill.
Culver Glass Specialties, Inc., New York, N. Y.
Dockson Corp., Detroit, Mich.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Fendall Co., Chicago, Ill.
Fibre-Metal Products Co., The, Chester, Pa.
Flood Safety Products Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
General Scientific Equip. Co., Philadelphia, Pa.
Industrial Products Co., Philadelphia, Pa.
Kedman Co., Salt Lake City, Utah
Kimball Safety Prod. Co., Cleveland, Ohio
Linde Air Products Company, a unit of Union Carbide and Carbon Corp., New York 17, N. Y.

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3837 Wabash Detroit 8, Mich.

Liquid Carbonic Corp., The, Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Metal & Thermit Corp., N. Y. 17, N. Y.
Metro Mfg. Co., L. I. City, N. Y.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago 11, Ill.
Natl. Welding Equip. Co., San Francisco, Cal.
Nutt Co., Buell W., Los Angeles, Calif.
Olympic Glove Co., Inc., The, New York, N. Y.
Pennsylvania Optical Co., Reading, Pa.
Pulmosan Safety Equip. Co., Brooklyn, N. Y.
Safety Clothing & Equip. Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Sellstrom Mfg. Co., Palatine, Ill.
Smith, A. O., Corp., Milwaukee, Wis.
Thermacote Welding Prods., Inc., Newark, N. J.
Univis Lens Co., The, Dayton, Ohio
Wallace Optical Co., Detroit, Mich.
Welding Alloys Mfg. Co., Newark, N. J.
Weldit, Inc., Detroit, Mich.
Welsh Mfg. Co., Providence, R. I.
Willson Products, Inc., Reading, Pa.
Wooldridge Aluminum Welding Prod., Malden, Mass.

HAND SHIELDS

(See: "Face Shields, Arc & Gas")

HATS, Safety

Boyer-Campbell Co., Detroit, Mich.
Chicago Eye Shield Co., Chicago, Ill.
Davis Emergency Equipment Co., Inc., Newark, N. J.
Dockson Corp., Detroit, Mich.
Fibre-Metal Products Co., The, Chester, Pa.
General Detroit Corp., The, Detroit, Mich.
Holcomb Safety Garment Co., Chicago, Ill.
Industrial Products Co., Philadelphia, Pa.
Jackson Prod. Inc., Warren, Mich.
McDonald, B. F., Co., Los Angeles, Calif.
Milburn Co., Detroit, Mich.
Mine Safety Appliances Co., Pittsburgh, Pa.
Pulmosan Safety Equip. Co., Brooklyn, N. Y.
Resistoflex Corp., Belleville, N. J.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.

HELMETS, Arc Welding

American Industrial Safety Equipment Co., Cleveland, Ohio
American Optical Co., Southbridge, Mass.
American Oxygen Service Corp., Harrison, N. J.

(Continued on page 63)

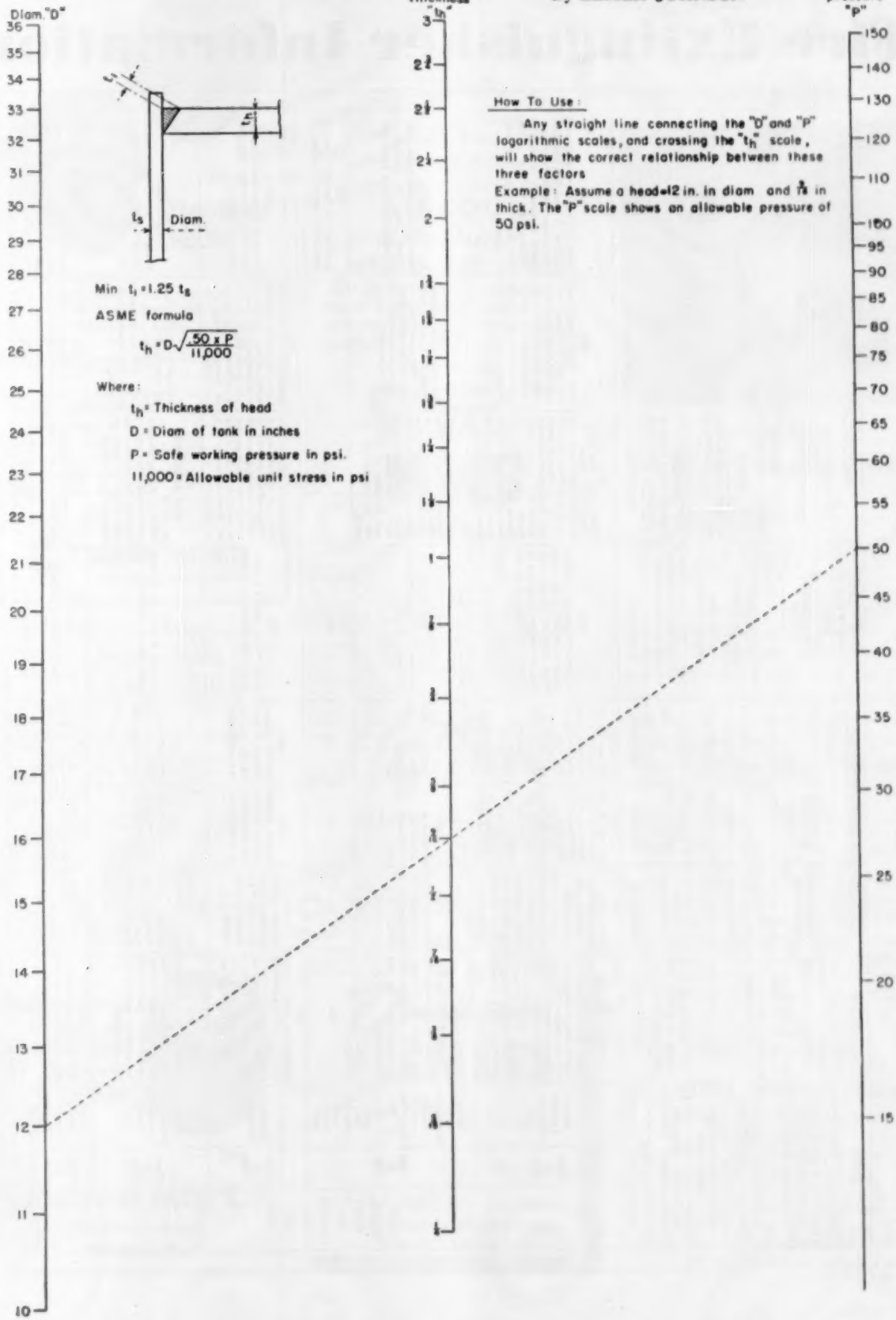
SUPERGOGGLES, series 70

New Gas Welding and Grinding Goggles made roomier for comfort and good fit, even over the largest spectacles. With elastic headband (shown) or with plastic headgear, telescopic arms.

JACKSON PRODUCTS
WARREN, MICHIGAN

Allowable Working Pressure on Welded Flat Tank Heads

By ELMER JOHNSON



Fire Extinguisher Information

TYPE			FOAM	CHEMICAL SOLUTION SODA ACID	ANTI-FREEZING		PUMP TYPE (Anti-freezing or plain water)	VAPORIZING LIQUID		CARBON DIOXIDE
METHOD OF OPERATING			INVERT	INVERT	INVERT	INVERT	PUMP	PUMP	PULL LEVER	OPEN VALVE
METHOD OF DISCHARGING EXTINGUISHING AGENT			CHEMICAL REACTION	CHEMICAL REACTION	CHEMICAL REACTION of capsule	GAS PRESSURE from carbon dioxide cylinder.	HAND PUMPING ACTION	PUMPING ACTION	STORED AIR PRESSURE	PRESSURE STORED IN CYLINDER
EFFECTIVE RANGE OF STREAM			35 TO 40 FEET	30 TO 40 FEET	30 TO 40 FEET	45 TO 55 FEET	30 TO 40 FEET	20 FEET OR MORE under full pump pressure	30 TO 40 FEET	6 TO 8 FEET under full pressure
RATED LIQUID CAPACITY OF MOST COMMON SIZE			2½ GALLONS	2½ GALLONS	2½ GALLONS	2½ GALLONS	5 GALLONS (also 2½ gallons)	1 QUART	1 GALLON	15 LBS.
QUANTITY OF PRINCIPAL EXTINGUISHING AGENT PRODUCED			18 TO 25 GALLONS	2½ GALLONS	2½ GALLONS	2½ GALLONS	5 GALLONS (also 2½ gallons)	Quantity variable — depends upon amount of liquid which comes in contact with heat of fire.	Quantity variable — depends upon amount of liquid which comes in contact with heat of fire.	Quantity variable — about 9 cu. ft. per pound of gas at normal temperature.
NATURE OF PRINCIPAL EXTINGUISHING AGENT			FIREFOAM a mass of bubbles filled with carbon dioxide gas.	LIQUID Soda Solution	LIQUID calcium chloride solution.	LIQUID calcium chloride solution.	LIQUID (plain water or calcium chloride solution).	FREE GAS produced when liquid is vaporized by heat of fire.	FREE GAS produced when liquid is vaporized by heat of fire.	CARBON DIOXIDE GAS AND SNOW
PRINCIPAL EXTINGUISHING EFFECT			BLANKETING	COOLING	COOLING	COOLING	COOLING	SMOTHERING	SMOTHERING	SMOTHERING
IT IS RECOGNIZED AS ADAPTED FOR USE ON	Class A Fires	Wood, Textiles, Rubbish, Etc.	YES BEST AVAILABLE for use in places involving Class "A" fires because of desirable characteristics not possessed by any other extinguishing agent (fireproofing effect; smaller wetting effect, etc.) Must be kept in heated cabinet when installed in places subject to freezing temperatures.	YES for use in places NOT involving oils, greases, etc., in any way. Must be kept in heated cabinet when installed in places subject to freezing temperatures.	YES for use in places NOT involving oils, greases, etc., in any way. DOES NOT REQUIRE PROTECTION AT TEMPERATURES DOWN TO 40 DEGREES F. BELOW ZERO	YES for use in places NOT involving oils, greases, etc., in any way. DOES NOT REQUIRE PROTECTION AT TEMPERATURES DOWN TO 40 DEGREES F BELOW ZERO	YES for use in places not involving oils, greases, etc. in any way. When Alico crystals are used, does not require protection at temperatures down to 40 degrees F. below zero.	NO Other types are better adapted to Class "A" fires. This type good only under most favorable conditions because of small size; difficulty of confining gas at seat of fire; force, range, and duration of stream not automatically assured; operator cannot devote entire attention to directing stream on fire.	NO Other types are better adapted to Class "A" fires. This type good only under most favorable conditions because of difficulty of confining gas at seat of fire.	NO Other types are better adapted to Class "A" fires. This type good only under most favorable conditions because of difficulty of confining gas at seat of fire, short range of stream. Not useful on overhead fires.
	Class B Fires	Gasoline, Oil, Greases, etc.	YES BEST AVAILABLE for use in places involving Class "B" fires because of characteristics not possessed by any other type.	NO because it has practically no blanketing effect.	NO because it has practically no blanketing effect.	NO because it has practically no blanketing effect.	NO because it has practically no blanketing effect.	YES but foam type is better adapted to Class "B" fires. This type good only under most favorable conditions because of small size; difficulty of confining gas at seat of fire; force, range and duration of stream not automatically assured.	YES but foam type is better adapted to Class "B" fires. This type good only under most favorable conditions because of difficulty of confining gas at seat of fire.	YES especially so under freezing conditions. Ideal for running or dripping flammable liquid fires.
		Flammable Liquids Not Derived from Alcohols; Alcohol, Acetone, Ether, Flammable Liquids Kindred to Alcohol	NO unless fires have spread beyond the extinguishing capacity of vaporizing liquid or carbon dioxide extinguisher and where current is turned off. The stream is a conductor, but a poor one.	NO	NO	NO	NO	NO	NO	YES Excellent for incipient fires in flammable liquids kindred to Alcohols.
	Class C Fires	Electrical Machinery	NO	NO except where current is turned off. The stream is a conductor.	NO except where current is turned off. The stream is a conductor.	NO except where current is turned off. The stream is a conductor.	NO except where current is turned off. The stream is a conductor.	YES satisfactory where fires have not spread beyond extinguishing capacity of extinguisher and especially in places where current is not likely to be turned off, because stream is a non-conductor.	YES satisfactory where fires have not spread beyond extinguishing capacity of extinguisher and especially in places where current is not likely to be turned off, because stream is a non-conductor.	YES Stream is a non-conductor, has no wetting, no solvent effect and leaves no residue.
	* Class D Fires	Pleasure Automobiles, Commercial Trucks, Etc.	NO Unless of special splash-proof construction. Must not be exposed to freezing temperature. Not suitable for pleasure automobiles because of size.	NO has practically no blanketing effect — not splash-proof, subject to freezing. Not suitable for pleasure automobiles because of size.	NO not splash-proof — has no blanketing effect.	NO not splash-proof — has no blanketing effect.	NO because of size; not splash-proof; has no blanketing effect.	YES BEST AVAILABLE for Class "D" fires, because it has smothering effect and is not subject to freezing. On account of its size it can be used on pleasure automobiles.	YES because it has a smothering effect and is not subject to freezing. On account of its size it cannot be used on pleasure automobiles.	YES because it has a smothering effect and is not subject to freezing.
	* Class D-1 Fires	Tank-Trucks, Trailer-Tractors	YES If of splash-proof construction. Must not be exposed to freezing temperature.	NO not splash-proof — has no blanketing effect.	NO not splash-proof — has no blanketing effect.	NO not splash-proof — has no blanketing effect.	NO has no blanketing effect.	YES because it has a smothering effect and is not subject to freezing.	YES because it has a smothering effect and is not subject to freezing.	YES because it has a smothering effect and is not subject to freezing.
UNDERWRITERS' RATING			A1-B1	A1	A1	A1	A1 (either size)	B2—C2	B2—C1	B1—C1

* The letters "D" and D-1 are for convenience, no letter having been assigned to this class by Underwriters' Laboratories.

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JACKSON

Fiber Glass HELMETS

One-piece helmet shells of fiber glass hold their shape, outlast vulcanized fiber many times. Choice of two helmet shells, either with fixed or lift-front lens holder in insulative, high-impact resistant plastic. Exclusive Jackson friction pivots adjust manually while helmet is worn, hold helmet in any position. New Adjust-O-Lok headgear (shown) permits fine, firm adjustment after putting helmet on. Winged knob is easy to handle. Two handshields use same shells, have fiber handles.

JACKSON PRODUCTS
WARREN, MICHIGAN

HELMETS, Arc Welding

(Continued from page 62)

Boyer-Campbell Co., The, Detroit, Mich.
Bullard, E. D., Co., The, San Francisco, Calif.
Burdett Oxygen Co., Inc., Cleveland, Ohio
Carter-Lockard Co., Los Angeles, Calif.
Chicago Eye Shield Co., Chicago, Ill.
Davis Emergency Equipment Co., Inc., Newark, N. J.
Dockson Corp., Detroit, Mich.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Fibre-Metal Prod. Co., The, Chester, Pa.
Flood Safety Prod. Co., Chicago, Ill.
General Scientific Equip. Co., Philadelphia, Pa.
Glendale Optical Co., Inc., Copiague, N. Y.
Greyhound A. C. Arc Welder Corp., Brooklyn, N. Y.
Holcomb Safety Garment Co., Chicago, Ill.
Jackson Prod., Warren, Mich.
Kedman Co., Salt Lake City, Utah
Kimball Safety Prod. Co., Cleveland, Ohio
McFerron-Myers Prod. Co., Cleveland, Ohio
Metro Mfg. Co., Long Island City, N. Y.
Mine Safety Appliances Co., Pittsburgh, Pa.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Pennsylvania Optical Co., Reading, Pa.
Precision Welder Mfg. Co., Chicago, Ill.
Pulmosan Safety Equip. Corp., Brooklyn, N. Y.
Safety Clothing & Equip. Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Sellstrom Mfg. Co., Palatine, Ill.
Superior Oxy-Acetylene Mach. Co., Hamilton, Ohio
US Electric Welder Corp., Toledo, Ohio
Victor Equipment Co., San Francisco, Calif.
Welders Products, Chicago, Ill.
Welding Apparatus Co., Chicago, Ill.
Welsh Mfg. Co., Providence, R. I.
Wheeler, F. H., Mfg. Co., Chicago, Ill.
Whitehead Metal Products Co., Inc., New York, N. Y.
Willson Products, Inc., Reading, Pa.
Wilson Welder & Metals Co., Inc., New York, N. Y.

HELMETS, Periscope

Industrial Prods. Co., Phila., Pa.

LINCOLN
Low-Priced
HEAD SHIELDS

LIGHT IN WEIGHT
RUGGED CONSTRUCTION
WELL VENTILATED
LEAKPROOF
COMFORTABLE
AMPLE ROOM FOR EYE GLASSES

Write for Bulletin 467

THE LINCOLN ELECTRIC COMPANY
Dept. 713, Cleveland 17, Ohio
Sales Offices and Field Service Shops in All Principal Cities.

LINCOLN

HELMETS, Sand Blast

American Optical Co., Southbridge, Mass.
Boyer-Campbell Co., Detroit, Mich.
Bullard, E. D., Co., San Francisco, Calif.
Burdett Oxygen Co., Cleveland, Ohio
Chicago Eye Shield Co., Chicago, Ill.
Fibre-Metal Products Co., The, Chester, Pa.
General Scientific Equip. Co., Philadelphia, Pa.
Glendale Optical Co., Inc., Copiague, N. Y.
Holcomb Safety Garment Co., Chicago, Ill.
Industrial Products Co., Philadelphia, Pa.
MacLeod Co., The, Cincinnati, Ohio
McDonald Co., B. F., Los Angeles, Calif.
Mine Safety Appliances Co., Pittsburgh, Pa.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Pangborn Corp., Hagerstown, Md.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Sellstrom Mfg. Co., Palatine, Ill.
Standard Safety Equipment Co., Chicago, Ill.
Willson Products, Inc., Reading, Pa.

HELMETS, with Safety Hat

American Optical Co., Southbridge, Mass.
Boyer-Campbell Co., Detroit, Mich.
Bullard, E. D., Co., San Francisco, Calif.
Burdett Oxygen Co., Cleveland, Ohio
Chicago Eye Shield Co., Chicago, Ill.
Davis Emergency Equipment Co., Inc., Newark, N. J.
Dockson Corp., Detroit, Mich.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Fibre-Metal Products Co., The, Chester, Pa.

(Continued on next page)

Manufacturers of face and eye protection. Welders' helmets, shields, goggles and lens.

Helmet #243

Sellstrom Mfg. Co.
226 Hicks Road
Palatine, Ill.

Dockson
HELMETS
Built for Better Service

. . . a complete line of dependable head and eye protection. Made right—priced right—proved right.

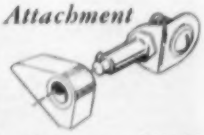
DOCKSON CORPORATION
3837 Wabash Detroit 8, Mich.

Double the Guard
on welding jobs . . .

with the M·S·A Combination
Skullgard—Welding Helmet

There are plenty of welding jobs where head protection is as vital as face protection. The M.S.A. combination Skullgard-Welding Helmet is the practical, comfortable solution to both hazards. The fracture-resistant Skullgard protects against head injury from falling objects, while the Welding Shield guards against weld-flash and heat.

Instant Release Attachment



Allows quick, easy removal and replacement of Welding Shield while Skullgard is being worn. Attaching posts of Shield slide into two, non-conducting plastic lugs on each side of helmet. Posts are equipped with spring catches. Light push on post ends retracts the catches, freeing the Shield from the Skullgard. Friction joints permit pivoting of shield for work inspection.

Bulletin No. CO-2 gives details.

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JACKSON

SAFETY HATS and CAPS

Made of fiber glass for lightness, and rigidly tested for maximum protection, with an exclusive, extruded plastic headband for better fit, the full-brimmed HAT (left) and the CAP (right) are available in seven standard colors.

CAP-and-HELMETS

Jackson arc welding helmets are pivoted from the sides of the safety cap. Other combinations are Cap-and-Goggles, Hat-and-Face Shields.

JACKSON PRODUCTS
WARREN, MICHIGAN

HELMETS, with Safety Hat

(Continued from page 63)

Flood Safety Products Co., Chicago, Ill.
Glendale Optical Co., Inc., Copiague, N. Y.
Holcomb Safety Garment Co., Chicago, Ill.
Industrial Products Co., Philadelphia, Pa.
Jackson Prod. Inc., Warren, Mich.
McDonald Co., B. F., Los Angeles, Calif.
Mine Safety Appliances Co., Pittsburgh, Pa.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Sellstrom Mfg. Co., Palatine, Ill.
Willson Products, Inc., Reading, Pa.

HELMETS, Supplied-Air

American Allsafe Co., Inc., Buffalo, N. Y.
American Optical Co., Southbridge, Mass.
Boyer-Campbell Co., Detroit, Mich.
Bullard, E. D., Co., San Francisco, Calif.
Burdett Oxygen Co., Cleveland, Ohio
Chicago Eye Shield Co., Chicago, Ill.
Davis Emergency Equipment Co., Inc., Newark, N. J.
Dockson Corp., Detroit, Mich.
Fibre-Metal Products Co., The, Chester, Pa.
Flood Safety Prod. Co., Chicago, Ill.
General Scientific Equipment Co., Philadelphia, Pa.
Industrial Products Co., Philadelphia, Pa.
McDonald Co., B. F., Los Angeles, Calif.
Mine Safety Appliances Co., Pittsburgh, Pa.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Parsons Engineering Corp., Cleveland, Ohio
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Smith, A. O. Corp., Milwaukee, Wis.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Willson Products, Inc., Reading, Pa.

LEAK DETECTORS

American Gas & Chemicals, Inc.

LEATHER, Weldors'

(See also specific item such as: "Aprons," "Capes," "Coats," "Gloves," "Overalls," "Pants," Etc.)

A & A Mfg. Co., Milwaukee, Wis.
Aljay Mfg. Co. Phila., Pa.
American Optical Co., Southbridge, Mass.
Colonial Leather Co., Milwaukee, Wis.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Fibre-Metal Products Co., The, Chester, Pa.
Industrial Gloves Co., Danville, Ill.
Lichtman & Sons, J., Newark, N. J.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Racine Glove Co., Inc., Rio, Wis.
Tilman, John & Co., Long Beach, Calif.
Universal Leather Co., Inc., Berlin, Wis.
Wheeler Protective Apparel, Inc., Chicago, Ill.

LEGGINGS, Asbestos, Fire Resistant Duck, Leather, Etc.

Advance Glove Mfg. Co., Detroit, Mich.
Aljay Mfg. Co., Inc., Philadelphia, Pa.
American Optical Co., Southbridge, Mass.
Boyer Campbell Co., Detroit, Mich.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Elliott Glove Co., Inc., Oconto, Wis.
General Scientific Equip. Co., Philadelphia, Pa.
Genter, C. D. & Co., Chattanooga, Tenn.
Green, Tweed & Co., No. Wales, Pa.
Holcomb Safety Garment Co., Chicago, Ill.
Industrial Gloves Co., Danville, Ill.
Industrial Products Co., Philadelphia, Pa.
Janos Asbestos Co., New York, N. Y.
Kimball Safety Prod. Co., Cleveland, Ohio
McDonald, B. F., Co., Los Angeles, Calif.
Mine Safety Appliances Co., Pittsburgh, Pa.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Olympic Glove Co., Inc., The, New York, N. Y.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Racine Glove Co., Inc., Rio, Wis.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Universal Leather Co., Inc., Berlin, Wis.
Wheeler Protective Apparel, Chicago, Ill.

LENS CLEANERS

American Agile Corp., Cleveland, Ohio
American Allsafe Co., Inc., Buffalo, N. Y.
American Optical Co., Southbridge, Mass.
Boyer-Campbell Co., The, Detroit, Mich.
Carhoff Co., Cleveland, Ohio
General Scientific Equipment Co., Philadelphia, Pa.
Klem Chemicals, Inc., Dearborn, Mich.
Merix Chemical Co., Chicago, Ill.
Mine Safety Appliances Co., Pittsburgh, Pa.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Safety Clothing and Equipment Co., Cleveland, Ohio.
Safety First Supply Co., Pittsburgh, Pa.
Sellstrom Mfg. Co., Palatine, Ill.
Willson Products, Inc., Reading, Pa.

LENS COATING, Against Pitting

American Agile Corp., Cleveland, Ohio
American Industrial Safety Equipment Co., Cleveland, Ohio
Atlas Welding Accessories Co., Ferndale, Mich.
Bausch & Lomb Optical Co., Rochester, N. Y.
Bullock Co., L. H., Richmond, Calif.
Burdett Oxygen Co., Cleveland, Ohio
General Scientific Equipment Co., Philadelphia, Pa.
Safety First Supply Co., Pittsburgh, Pa.
Sellstrom Mfg. Co., Palatine, Ill.
Wallace Optical Co., Inc., Detroit, Mich.

LENS PROTECTORS

American Industrial Safety Equip. Co., Cleveland, Ohio
American Optical Co., Southbridge, Mass.
Bullock, L. H., Co., Berkeley, Calif.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Eastern Safety Equip. Co., New York, N. Y.
Eutectic Welding Alloys Corp., Flushing, N. Y.
Faulk, F. R., Pittsburgh, Pa.

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- Capes Available in Four Sizes
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Flood Safety Prod. Co., Chicago, Ill.
General Scientific Equipment Co., Philadelphia, Pa.
Mine Safety Appliances Co., Pittsburgh, Pa.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Parker Safety Equipment Co., Irvington, N. J.
Pennsylvania Optical Co., Reading, Pa.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Ragle, J. M., Industries, Kansas City, Mo.
Safety Clothing and Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Victor Equipment Co., San Francisco, Calif.
Welding Alloys Mfg. Co., Newark, N. J.
Welsh Mfg. Co., Providence, R. I.
Willson Products, Inc., Reading, Pa.

MACHINERY GUARDS and SAFETY APPLIANCES

A & A Mfg. Co., Milwaukee, Wis.
Benjamin Electric Manufacturing Co., Des Plaines, Ill.
Boyer-Campbell Co., The, Detroit, Mich.
Chicago Eye Shield Co., Chicago, Ill.
Clizbe Bros. Mfg. Co., Plymouth, Ind.
Industrial Products Co., Phila., Pa.
Junkin Safety Appliance Co., Inc., Louisville, Ky.
Morrison Prod., Inc., Cleveland, Ohio
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Safety Clothing & Equipment Co., Cleveland, Ohio
Schrader's, A., Son, Division of Scovill Manufacturing Co., Inc., Brooklyn, N. Y.
Sellstrom Mfg. Co., Palatine, Ill.
Wright-Austin Co., Detroit, Mich.

MASKS

(See: "Oxygen Masks," "Paint Spray Masks," and "Sand Blast Masks")

OPTICAL CASES

American Optical Co., Southbridge, Mass.
Bausch & Lomb Optical Co., Rochester, N. Y.
Kimball Safety Prod. Co., Cleveland, Ohio
Sellstrom Mfg. Co., Chicago, Ill.
Willson Products, Inc., Reading, Pa.

OVERALLS and PANTS, Asbestos, Fire-Resistant Duck, Leather

Aljay Mfg. Co., Inc., Philadelphia, Pa.
American Optical Co., Southbridge, Mass.
Boyer-Campbell Co., Detroit, Mich.
Davis Emergency Equipment Co., Inc., Newark, N. J.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Elliot Glove Co., Inc., Oconto, Wis.
Fibre-Metal Products Co., The, Chester, Pa.
General Scientific Equipment Co., Philadelphia, Pa.
Genter, C. D., & Co., Chattanooga, Tenn.
Holcomb Safety Garment Co., Chicago, Ill.
Industrial Gloves Co., Danville, Ill.
Industrial Products Co., Philadelphia, Pa.
Janos Asbestos Co., New York, N. Y.
Johns-Manville, New York, N. Y.
McDonald, B. F., Co., Los Angeles, Calif.
Metal & Thermit Corp., N. Y. 17, N. Y.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago, Ill.
Olympic Glove Co., Inc., The, New York, N. Y.
Pulmosan Safety Equip. Co., Brooklyn, N. Y.
Racine Glove Co., Inc., Rio, Wis.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Standard Safety Equipment Co., Chicago, Ill.
Streichert, E. J., Chicago, Ill.
Tillman & Co., John, Long Beach, Calif.
Universal Leather Co., Inc., Berlin, Wis.
Wheeler Protective Apparel, Inc., Chicago, Ill.
Wickman Glove Co., Berkeley, Calif.

OXYGEN MASKS

American Gas & Chemical Corp., Harrison, N. J.
Davis, Emergency Equipment Co., Inc., Newark, N. J.
Liquid Carbonic Corp., The, Chicago, Ill.
Mine Safety Appliances Co., Pittsburgh, Pa.
Nageldinger, J., & Son, Inc., New York, N. Y.
National Cylinder Gas Co., Chicago, Ill.
National Welding Equip. Co., San Francisco, Cal.
Puritan Compressed Gas Corp., Kansas City, Mo.
Safety First Supply Co., Pittsburgh, Pa.
Varkell, Paul, Co., New York, N. Y.

PAINT SPRAY MASKS

American Optical Co., Southbridge, Mass.
Boyer-Campbell Co., The, Detroit, Mich.
Chicago Eye Shield Co., Chicago, Ill.
Davis Emergency Equipment Co., Inc., Newark, N. J.
DeVilbiss Co., The, Toledo, Ohio
Dockson Corp., Detroit, Mich.
General Detroit Corp., The, Detroit, Mich.
General Scientific Equipment Co., Philadelphia, Pa.
Mine Safety Appliances Co., Pittsburgh, Pa.
Paasche Airbrush Co., Chicago, Ill.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Sellstrom Mfg. Co., Chicago, Ill.
Willson Products, Inc., Reading, Pa.

PIPING, Blow, Exhaust and Ventilating

American Agile Corp., Bedford, Ohio
Midwest Piping & Supply Co., Inc., St. Louis, Mo.
Naylor Pipe Co., Chicago, Ill.
Paesche Airbrush Co., Chicago, Ill.
Schmieg Industries, Inc., Detroit, Mich.
Sprout, Waldron & Co., Inc., Muncy, Pa.
Taylor Forge & Pipe Works, Chicago, Ill.

PLASTIC COVER LENSES

Air Reduction Sales Co., New York, N. Y.
American Optical Co., Southbridge, Mass.
Arcos Corp., Phila., Pa.
Atlas Welding Accessories Co., Ferndale, Mich.
Burdett Oxygen Co., Cleveland, Ohio
Chicago Eye Shield Co., Chicago, Ill.
Dockson Corp., Detroit, Mich.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Fendall Co., Chicago, Ill.
Fibre-Metal Products Co., The, Chester, Pa.
Flood Safety Products Co., Chicago, Ill.
Metal & Thermit Corp., New York 17, N. Y.
Mine Safety Appliances Co., Pittsburgh, Pa.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
National Cylinder Gas Co., Chicago, Ill.
Oxo Welding Equipment Co., Chicago, Ill.
Pennsylvania Optical Co., Reading, Pa.
Pulmosan Safety Equip., Co., Brooklyn, N. Y.
Sellstrom Mfg. Co., Palatine, Ill.
Smith, A. O. Corp., Milwaukee, Wis.
Welding Alloy Mfg., Co., Newark, N. J.

RESPIRATORS

American Optical Co., Southbridge, Mass.
Chicago Eye Shield Co., Chicago, Ill.
Davis Emergency Equipment Co., Inc., Newark, N. J.
DeVilbiss Co., The, Toledo, Ohio
Dockson Corp., Detroit, Mich.
General Scientific Equip. Co., Philadelphia, Pa.
Guyan Machinery Co., Logan, W. Virginia
Industrial Products Co., Philadelphia, Pa.
McDonald Co., B. F., Los Angeles, Calif.
Mine Safety Appliances Co., Pittsburgh, Pa.
Nageldinger, J., & Sons, Inc., Bronx, N. Y.
National Cylinder Gas Co., Chicago, Ill.
Paesche Airbrush Co., Chicago, Ill.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Standard Safety Equipment Co., Chicago, Ill.
Superior Oxy-Acetylene Machine Co., Hamilton, Ohio
Willson Products, Inc., Reading, Pa.

SAFETY SHOES

Davis Emergency Equipment Co., Inc., Newark, N. J.
Dunn Products, Chicago, Ill.
Greene, Tweed & Co., North Wales, Pa.
Industrial Products Co., Philadelphia, Pa.
International Shoe Co., St. Louis, Mo.
Lehigh Safety Shoe Co., Inc., Allentown, Pa.
Mine Safety Appliances Co., Pittsburgh, Pa.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Safety First Supply Co., Pittsburgh, Pa.
Thom McAn Safety Shoe Div., New York, N. Y.
Thompson Engineering Co., The, Grand Rapids, Mich.

SALT TABLETS and DISPENSERS

Davis Emergency Equip. Co., Inc., Newark, N. J.
Dockson Corp., Detroit, Mich.
General Scientific Equip. Co., Philadelphia, Pa.
Industrial Prod Co., Philadelphia, Pa.
International Salt Co., Inc., Scranton, Pa.
McDonald, B. F., Co., Los Angeles, Calif.
Mine Safety Appliances Co., Pittsburgh, Pa.
Morton Salt Co., Chicago, Ill.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Safety Clothing & Equip. Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Standard Safety Equip. Co., Chicago, Ill.
United States Safety Service Co., Kansas City, Mo.

SAND BLAST MASKS

American Optical Co., Southbridge, Mass.
Boyer-Campbell Co., The, Detroit, Mich.
Chicago Eye Shield Co., Chicago, Ill.
Davis Emergency Equipment Co., Inc., Newark, N. J.
Dockson Corp., Detroit, Mich.
General Scientific Equipment Co., Philadelphia, Pa.
Industrial Products Co., Philadelphia, Pa.
Matthews, Jas H., & Co., Pittsburgh, Pa.
Mine Safety Appliances Co., Pittsburgh, Pa.
Paesche Airbrush Co., Chicago, Ill.
Pangborn Corp., Hagerstown, Md.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Sellstrom Mfg. Co., Chicago, Ill.
Standard Safety Equipment Co., Chicago, Ill.
Willson Products, Inc., Reading, Pa.

SKIN CREAM, Cleansing and Protective

American Optical Co., Southbridge, Mass.
Boyer-Campbell Co, Detroit, Mich.
Cadet Creme Sales Co., Springfield, Mass.
Davis Emergency Equipment Co., Inc., Newark, N. J.
Dennis Chemical Co., St. Louis, Mo.
Dunn Products, Chicago, Ill
Industrial Products Co., Philadelphia, Pa.
Milburn Co., Detroit, Mich.
Mine Safety Appliances Co., Pittsburgh, Pa.
Permalatem Welding Alloys, Inc., Redbank, N. J.
Pulmosan Safety Equip. Corp., Brooklyn, N. Y.
Safety Clothing & Equipment Co., Cleveland, Ohio

SLEEVES, Asbestos, Fire-Resistant Duck, and Leather

A & A Mfg. Co., Milwaukee, Wis.
Advance Glove Mfg. Co., Detroit, Mich.
Aljoy Manufacturing Co., Inc., Philadelphia, Pa.
American Optical Co., Southbridge, Mass.
Boyer-Campbell Co., Detroit, Mich
Bullard, E. D., Co., San Francisco, Calif.
C. R. Daniels, Inc., Baltimore, Md.
Eastern Equipment Co., Inc., Willow Grove, Pa.
General Scientific Equipment Co., Philadelphia, Pa.
Genter, C. D., & Co., Chattanooga, Tenn.
Holcomb Safety Garment Co., Chicago, Ill.
Industrial Gloves Co., Danville, Ill.
Industrial Products Co., Philadelphia, Pa.
Kimball Safety Prod. Co., Cleveland, Ohio
McDonald, B. F., Co., Los Angeles, Calif.
Mine Safety Appliances Co., Pittsburgh, Pa.
Morris, Wheeler & Co., Philadelphia, Pa.
Olympic Glove Co., Inc., The, New York, N. Y.
Pulmosan Safety Equip. Corp., Brooklyn, N. Y.
Raybestos-Manhattan, Inc., Passaic, N. J.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Singer Glove Mfg. Co., Chicago, Ill.
Standard Safety Equipment Co., Chicago, Ill.
Tillman, John & Co., Long Beach, Calif.
Universal Leather Co., Inc., Berlin, Wis.
Wheeler Protective Apparel, Inc., Chicago, Ill.

SWEAT BANDS

American Optical Co., Southbridge, Mass.
Dockson Corp., Detroit, Mich.
Eastern Equipment Co., Inc., Willow Grove, Pa.
Fibre-Metal Products Co., The, Chester, Pa.
General Scientific Equip. Co., Philadelphia, Pa.
Industrial Products Co., Philadelphia, Pa.
Kimball Safety Prod. Co., Cleveland, Ohio
Mine Safety Appliances Co., Pittsburgh, Pa.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Safety Clothing & Equipment Co., Cleveland, Ohio
Safety First Supply Co., Pittsburgh, Pa.
Standard Safety Equip. Co., Chicago, Ill.
Tillman, John & Co., Long Beach, Calif.

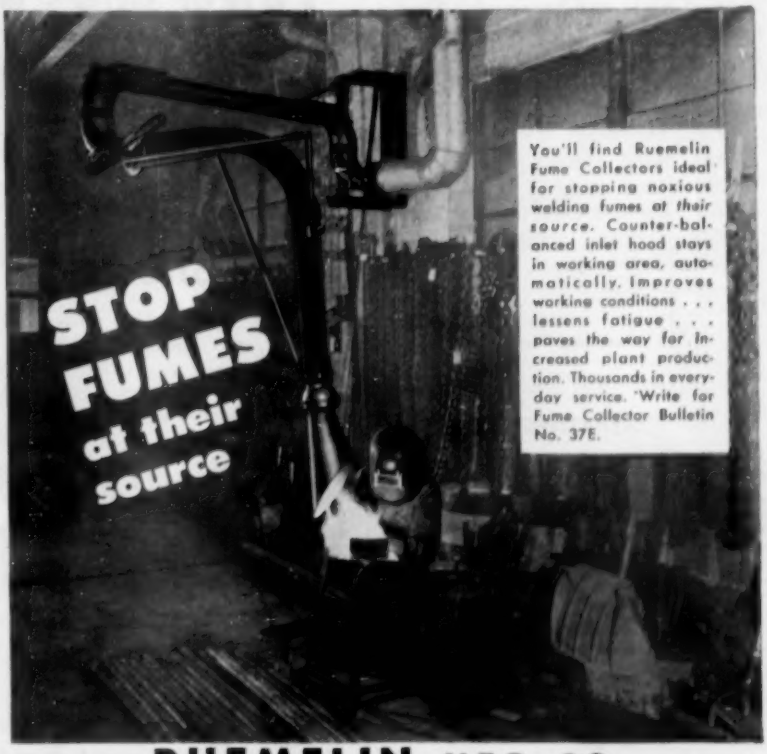
VENTILATING APPARATUS

(See also: "Exhaust Fans," "Collectors, Exhausters and Blower Systems," Etc.)

Aget-Detroit Mfg. Co., Ann Arbor, Mich.
Aluminum Products Co., San Francisco, Calif.
American Wheelabrator & Equipment Corp., Mishawaka, Ind.
Cheleas Fan & Blower Co., Inc., Irvington, N. J.
De Bothezat Fans Div., American Machine & Metals, Inc., East Moline, Ill.
Detroit Stamping Co., Detroit, Mich.
Engwald Corp., Brooklyn, N. Y.
General Blower Co., Morton Grove, Ill.
Ilg Elec. Ventilating Co., Chicago, Ill.
Metal Bond Mfg. Co., St. Louis, Mo.
Mine Safety Appliances Co., Pittsburgh, Pa.
R. S. Products Corporation, Philadelphia, Pa.
Ruemelin Mfg. Co., Milwaukee, Wis.
Schneible, Claude B., Co., Chicago, Ill.
Standard Safety Equipment Co., Chicago, Ill.
Torit Mfg. Co., St. Paul Minn.
United Blower Co., New York, N. Y.
Westinghouse Electric Corp., Pittsburgh, Pa.
Whiting Corp., Harvey, Ill.

WELDORS' CAPS

Advertisers Mfg. Co., Ripon, Wis.
Aljoy Manufacturing Co., Inc., Philadelphia, Pa.
Boyer-Campbell Co., Detroit, Mich.
Champion Rivet Co., The, Cleveland, Ohio
Eastern Equip. Co., Willow Grove, Pa.
Fibre-Metal Products Co., The, Chester, Pa.
Genter, C. D. & Co., Chattanooga, Tenn.
Hobart Brothers Co., Troy, Ohio
Liquid Carbonic Corp., The, Chicago, Ill.
Louisville Cap Co., Louisville, Ky.
Ragle Industries, J. M., Kansas City, Mo.
Wheeler Protective Apparel, Inc., Chicago, Ill.



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INDUSTRIAL EQUIPMENT

In its Welding Supply Index, NWSA has set up a catch-all classification of "Non-Welding Items." This category carries numbers 1000-1099. In the sub-head listing, there are items which conflict with sub-head listings in the 800 group — "Miscellaneous welding items."

Conflicts of this nature make it difficult to catalog items properly, but they are to be expected in establishing any basic index system. Time will work out such problems.

Until this listing is more stable, Fact File Issue will carry items of NWSA's 1000-1099 listings under the general heading of "Industrial Equipment." Basically, this classification is devoted to items which are useful in the weld shop, but which are infrequently stocked by welding supply distributors.

Most of the items have little importance in actual welding operations except that they make welding much easier. To more accurately identify the equipment of this group, the word "heavy" might well be placed before the title to make it read "Heavy Industrial Equipment."

According to NWSA, the sub-headings of this group should be:

1010 Abrasives
1020 Hand tools
1030 Power tools
1040 Machine tools
1050 Hardware items
1080 Miscellaneous

ABRASIVES

Abrasive Products, Inc., So. Braintree, Mass.
American Wheelabrator & Equipment Corp., Mishawaka, Ind.
Atlantic Abrasive Corp., So. Braintree, Mass.
Bates Products, Inc., Chicago, Ill.
Bay State Abrasive Products Co., Westboro, Mass.
Behr-Manning Corp. Troy, N. Y.
Carborundum Co., The, Niagara Falls, N. Y.
Chicago Wheel Mfg. Co., Chicago, Ill.
Cincinnati Milling Machine Co., Cincinnati 9, Ohio
Clayton-Sherman Abrasives Co., Detroit, Mich.
Clover Mfg. Co., Norwalk, Conn.
Cortland Grinding Wheels Corp., Chester, Mass.
Desanno, A. P., & Son, Inc., Phoenixville, Pa.
Divine Brothers Co., Utica, N. Y.
E. I. DuPont de Nemours & Co., Inc., Wilmington, Del.
Fibre Abrasive Corp., Chicago, Ill.
Ideal Industries, Inc., Sycamore, Ill.
Industrial Overlay Metals, Inc., Eaton, Ohio
Macklin Co., Jackson, Mich.
Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc., Passaic, N. J.
Michigan Abrasive Co., Detroit, Mich.
Mid-West Abrasive Co., Owosso, Mich.
Minnesota Mining and Mfg. Co. St. Paul, Minn.
Norton Co., Worcester, Mass.
Roberts Rubber Co., Weldon, Newark, N. J.
Safety Grinding Wheel & Machine Co., Springfield, Ohio
Simonds Abrasive Co., Philadelphia, Pa.
Simonds Worden White Co., Dayton, Ohio
Strand, N. A., Div., The Belmar Corp., Chicago Ill.
United States Rubber Co., Fort Wayne, Ind.
Universal Whee[illegible] Abrasive Corp., Chicago, Ill.

ABRASIVE BELTS

Abrasive Products, Inc., So. Braintree, Mass.
Armour & Co., Coated Abrasives Div., Chicago, Ill.
Atlas Abrasives Corp., Brooklyn, N. Y.
Bay State Abrasive Products Co., Westboro, Mass.
Behr-Manning Corp., Troy, N. Y.
Carborundum Co., The, Niagara Falls, N. Y.
Clover Mfg. Co., Norwalk, Conn.
Do-All Co., The, DesPlaines, Ill.
Michigan Abrasive Co., Detroit Mich.
Midwest Abrasive Co., Owosso, Mich.
Minnesota Mining and Mfg. Co., St. Paul, Minn.
Norton Co., Worcester, Mass.
Ryman Engineering Co., Inc., Ellwood City, Pa.
Tinkote Co., Revere, Mass.
Universal Wheel & Abrasive Corp., Chicago, Ill.
Victor Belate & Textile Belting Co., New York, N. Y.

ABRASIVE BELT GRINDERS

American Diamond Saw Co., Portland, Ore.
Acme Mfg. Co., Detroit, Mich.
Balmar, Franklin, Corp., Baltimore, Md.
Behr-Manning Corp., Troy, N. Y.
Buckeye Tool Corp., Dayton, Ohio
Delta Power Tool Div. Rockwell Mfg. Co., Milwaukee, Wis.
Divine Brothers Co., Utica, N. Y.
Fox Grinders, Inc., Pittsburgh, Pa.
Hammond Machinery Builders, Inc., Kalamazoo, Mich.
Jones Engineering Co., Ellwood City, Pa.
MacDermid, Inc., Waterbury, Conn.
Paterson Welding Laboratories, Kansas City, Mo.
Porter-Cable Machine Co., Syracuse, N. Y.
Ryman Engineering Co., Inc., Ellwood City, Pa.
Sellstrom Mfg. Co., Palatine, Ill.
Standard Electric Tool Co., The, Cincinnati, Ohio
Van Dorn Electric Tool Co., Towson, Md.
Wells Sales Corp., New York, N. Y.

ABRASIVE BRICKS and STICKS

Bay State Abrasive Products Co., Westboro, Mass.
Behr-Manning Corp. (Norton Abrasives), Troy, N. Y.
Carborundum Co., The, Niagara Falls, N. Y.
Cincinnati Milling Products Div., Cincinnati, Ohio
Cortland Grinding Wheels Corp., Chester, Mass.
Cratex Mfg. Co., San Francisco, Calif.
Macklin Co., Jackson, Mich.
Mid-West Abrasive Co., Owosso, Mich.
Norton Co., Worcester, Mass.
Roberts, Weldon, Rubber Co., Brightboy Industrial Division, Newark, N. J.
Sandusky Abrasive Wheel Co., Kalamazoo, Mich.
Simonds Abrasive Co., Philadelphia, Pa.
Sterling Grinding Wheel Div. of the Cleveland Quarries Co., Tiffin, Ohio
Universal Wheel & Abrasive Corp., Chicago, Ill.

ABRASIVE DISCS

Abrasive Products, Inc., South Braintree, Mass.
Albertson & Co., Inc., Sioux City, Iowa
Armour & Co., Coated Abrasive Div., Chicago, Ill.
Atlas Abrasive Corp., Brooklyn, N. Y.
Bates Products, Inc., Chicago, Ill.
Behr-Manning Corp., Troy, N. Y.
Besly-Welles Corp., Beloit, Wis.
Chicago Wheel & Mfg. Co., Chicago, Ill.
Clover Mfg. Co., Norwalk, Conn.
Cortland Grinding Wheels Corp., Chester, Mass.
de Sanno, A. P., & Sons, Inc., Phoenixville, Pa.
Haskins, R. G., Co., Chicago, Ill.
Hoffman, R. W., Co., Inc., Chicago, Ill.
Michigan Abrasive Co., Detroit, Mich.
Mid-West Abrasive Co., Owosso, Mich.
Minnesota Mining & Mfg. Co., St. Paul, Minn.
Norton Co., Worcester, Mass.
Raybestos-Manhattan, Inc., Passaic, N. J.
Roberts, Weldon Rubber Co., Brightboy Industrial Division, Newark, N. J.
Sandusky Abrasive Wheel Co., Kalamazoo, Mich.
Skil Corp., Chicago, Ill.
Thermoid Rubber, Division of Thermoid Co., Trenton, N. J.
U. S. Rubber Co., New York, N. Y.
Wisconsin Abrasive Co., Milwaukee, Wis.

"Power Bite" of 3M Discs and Belts gives quick finishes

Firm bond, sharp mineral, even coating of 3M discs and belts mean better work, longer wear, less time spent on each job.

Available in all standard grits and sizes.

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MINNESOTA MINING & MFG. CO., St. Paul 6, Minn., also makers of "Scotch" Brand Pressure-sensitive Tapes, "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-Slip Surfacing, "3M" Adhesives.

A-MFCA4

ABRASIVE GRAINS

Carborundum Co., The, Niagara Falls, N. Y.
Macklin Co., Jackson, Mich.
Mid-West Abrasive Co., Owosso, Mich.
Norton Co., Worcester, Mass.
Simonds Abrasive Co., Philadelphia, Pa.

AIR COMPRESSORS

Brunner Manufacturing Co., Utica, N. Y.
Champion Pneumatic Machinery Co., Chicago, Ill.
Chicago Pneumatic Tool Co., New York, N. Y.
Curtis Pneumatic Machinery, Div. of Curtis Mfg. Co., St. Louis, Mo.
DeVilbiss Co., The, Toledo, Ohio
Fairbanks, Morse & Co., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
Joy Mfg. Co., Pittsburgh, Pa.
Kellogg Division of The American Brake Shoe Co., Rochester, N. Y.
Paasche Airbrush Co., Chicago, Ill.
Roots-Connersville Blower Corp., Connersville, Ind.
Schramm, Inc., West Chester, Pa.
Smith, Gordon, & Co., Inc., Bowling Green, Ky.
Worthington Corp., Dunellen, N. J.

AIR CYLINDERS

Lapeer Mfg. Co., Lapeer, Mich.
Lindberg Engineering Co., Chicago, Ill.
Miller Fluid Power Co., Melrose Park, Ill.
Studebaker Machine Co., Maywood, Ill.
Swift Electric Welder Co., Detroit, Mich.
Taylor-Wharton Iron & Steel Co., Cincinnati, Ohio

AIRLINE FITTINGS

Aro Equipment Corp., Bryan, Ohio
Bellows Co., Akron, Ohio
Chicago Pneumatic Tool Co., New York, N. Y.
Dallett Co., The, Philadelphia, Pa.
DeVilbiss Co., The, Toledo, Ohio
Dixon Valve & Coupling Co., Philadelphia, Pa.
Dockson Corp., Detroit, Mich.
Hose Accessories Co., Philadelphia, Pa.
Hunt, C. B., & Son, Salem, Ohio
Knox Mfg. Co., Philadelphia, Pa.
Lincoln Engineering Co., St. Louis, Mo.
Lunkenheimer Co., The, Cincinnati, Ohio
Mulconroy Co., Philadelphia, Pa.
National Welding Equip. Co., San Francisco, Calif.
Paasche Airbrush Co., Chicago, Ill.
Pulmosan Safety Equip. Corp., Brooklyn, N. Y.
Rotor Tool Co., Cleveland, Ohio
Schrader's, A., Son, Div. of Scovill Mfg. Co., Inc., Brooklyn, N. Y.
Stewart-Warner Corp., Alemite Div., Chicago, Ill.
Weatherhead Company The, Cleveland, Ohio

AIRLINE LUBRICATORS

Aro Equipment Corp., Bryan, Ohio
Gardner-Denver Co., Quincy, Ill.
Hannifin Corp., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
Lincoln Engineering Co., St. Louis, Mo.
M-B Products Co., Detroit, Mich.
Norgren Co., C. A., Denver, Colo.
Paasche Airbrush Co., Chicago, Ill.
Schrader's, A., Son., Div. of Scovill Mfg. Co., Inc., Brooklyn, N. Y.
Victor Equip. Co., San Francisco, Calif.

AIR RECEIVERS

Curtis Pneumatic Machinery, Div. of Curtis Mfg. Co. St. Louis, Mo.
Pressed Steel Tank Co., Milwaukee, Wis.
Riverside Iron Works Ltd., Calgary, Canada
Schramm, Inc., West Chester, Pa.
Worthington Pump & Machinery Corp., Harrison N. J.

ANVIL and Vise Combined

Champion Blower & Forge Co., Lancaster, Pa.
Illinois Iron & Bolt Co., Carpentersville, Ill.
Wilton Tool Mfg. Co., Chicago, Ill.

ANVILS, Bench, Blacksmiths', Saw

Atkins-Saw Div., Borg-Warner Corp., Indianapolis, Ind.
Columbian Vise & Mfg. Co., The, Cleveland, Ohio (Wrought)
Columbus Anvil & Forging Co., The, Columbus, Ohio
Disston, Henry & Sons, Tacony, Philadelphia, Pa.
Fisher & Norris (Eagle Anvil Works), Trenton, N. J.
Illinois Iron & Bolt Co., Carpentersville, Ill.
Simonds Saw & Steel Co., Fitchburg, Mass.

ASBESTOS, Sheets and Paste

Carey, Philip, Mfg. Co., Cincinnati, Ohio
Greene, Tweed & Co., North Wales, Pa.
Janos Asbestos Co., New York, N. Y.
Johns-Manville Corp., New York, N. Y.
Keasbey & Mattison Co., Ambler, Pa.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
Raybestos-Manhattan, Inc., Passaic, N. J.

BAND SAW MACHINES

Armstrong-Blum Mfg. Co., Chicago, Ill.
Boice-Crane Co., Toledo, Ohio
Delta Power Tool Division of Rockwell Mfg. Co., Milwaukee, Wis.
DeWalt, Inc., Lancaster, Pa.
DoAll Co., The, Des Plaines, Ill.
Duro Metal Products Co., Chicago, Ill.
Foley Mfg. Co., Minneapolis, Minn.
Heston & Anderson, Fairfield, Iowa
Johnson Mfg. Corp., Albion, Mich.
Johnson Manufacturing Corp., New York, N. Y.
Kalamazoo Tank & Silo Co., Machine Tool Division, Kalamazoo, Mich.
Peerless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.
Simonds Saw and Steel Co., Fitchburg, Mass.
Walker-Turner Co., Inc., Plainfield, N. J.
Wells Manufacturing Corp., Three Rivers, Mich.

BELTS, Abrasive

(See: "Abrasive Belts")

BENDERS—Conduit, Pipe and Tubing

(See also: "Pipe Bending Machines")

Blackhawk Mfg. Co., Milwaukee, Wis.
Durbin-Durco, St. Louis, Mo.
Duro Metal Products Co., Chicago, Ill.
Greenlee Tool Co. (Division of Greenlee Bros. & Co.), Rockford, Ill.
Hossfeld Mfg. Co., Winona, Minn.
Imperial Brass Mfg. Co., The, Chicago, Ill.
O'Neil-Irwin Mfg. Co., Lake City, Minn.
Pandjiris Weldment Co., St. Louis, Mo.
Parker Appliance Co., Inc., The, Cleveland, Ohio
Pedrick Tool & Machine Co., Philadelphia, Pa.
Plomb Tool Co., Los Angeles, Calif.
Tal Bender, Inc., Milwaukee Wis.
Templeton, Kenly & Co., Chicago, Ill.
Toledo Pipe Threading Machine Co., The, Toledo, Ohio
Wallace Supplies Mfg. Co., Chicago, Ill.
Weatherhead Co., The, Cleveland, Ohio

VICTOR

Filter-Regulator-Lubricator

For use on air-operated tools and machinery to regulate, lubricate and filter dirt and water out of the air supply. Can be cleaned without removal from line. Oil cup can be filled while operating. For 1/4" and 3/8" pipe.

VICTOR EQUIPMENT CO.

844 Folsom St. San Francisco 7
3821 Santa Fe Ave. Los Angeles 58

BENDING BLOCKS

Acorn Iron & Supply Co., Phila., Pa.
Stahl Equipment Co., Brookline Village, Mass.

BENDING BRAKES

Airtherm Mfg. Co., St. Louis, Mo.
Barth Mfg. Co., The, Milldale, Conn.
Munton Manufacturing Co., Franklin Park, Ill.
Niagara Machine & Tool Works, Buffalo, N. Y.
O-Neil-Irwin Mfg. Co., Lake City, Minn.
Pyramid Steel Co., Cleveland, Ohio
Service Machine Co., Elizabeth, N. J.
Verson Allsteel Press Co., Chicago, Ill.

BENDING MACHINES, Pipe

(See: "Pipe Bending Machines")

BENDING ROLLS

Bethlehem Steel Co., Bethlehem, Pa.
Bissett Steel Co., The, Cleveland, Ohio
Buffalo Forge Co., Buffalo, N. Y.
Kling Bros. Engineering Works, Chicago, Ill.
Niagara Machine & Tool Works, Buffalo, N. Y.
O'Neil-Irwin Mfg. Co., Lake City, Minn.
Pedrick Tool & Machine Co., Philadelphia, Pa.
Service Machine Co., Elizabeth, N. J.
Wallace Supplies Mfg. Co., Chicago, Ill.
Webb Corp., The, Webb City, Mo.

BENDING and STRAIGHTENING MACHINES, for Beam, Rail, Rod or Shaft

Baldwin Locomotive Works, The, Philadelphia, Pa.
Blackhawk Mfg. Co., Milwaukee, Wis.
Champion Blower & Forge Co., Lancaster, Pa.
Cleveland Crane & Engineering Co., Wickliffe, Ohio
Dudgeon, Richard, Inc., New York, N. Y.
Hossfeld Mfg. Co., Winona, Minn.
Hydraulic Press Mfg. Co., The, Mount Gilead, Ohio
Kling Bros. Engineering Works, Chicago, Ill.
Medart Co., The, St. Louis, Mo.
Niagara Machine & Tool Works, Buffalo, N. Y.
Pandjiris Weldment Co., St. Louis, Mo.
Studebaker Machine Co., Maywood, Ill.
Thomas Machine Mfg. Co., Pittsburgh, Pa.
Watson-Stillman Co., The, Roselle, N. J.
Webb Corp., The, Webb City, Mo.

BLACKSMITHS' HAMMERS

American Fork & Hoe Co., Cleveland, Ohio
Champion DeArment Tool Co., Meadville, Pa.
Greene, Tweed & Co., No. Wales, Pa.
Heller Brothers Company, Newark, N. J.
Leetonia Tool Co., The, Leetonia, Ohio
Mayhew Steel Products, Inc., Shelburne Falls, Mass.
Plumb, Fayette R., Inc., Philadelphia, Pa.
Pyramid Steel Co., Cleveland, Ohio

BLOCKS, Chain

Chester Hoist Co., Lisbon, Ohio
Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
Ford Chain Block Division of American Chain & Cable Co., Inc., Philadelphia, Pa.
Manning, Maxwell & Moore, Inc., Shaw-Box Crane & Hoist Division, Muskegon, Mich.
Reading Chain & Block Corp., Reading, Pa.
Robbins & Myers, Inc., Hoist & Crane Division, Springfield, Ohio
Round, David & Son, Cleveland, Ohio
Sasgen Derrick Co., Chicago, Ill.
Wright Mfg. Division of American Chain & Cable Co., Inc., York, Pa.
Yale & Towne Mfg. Co., The (Philadelphia Division), Philadelphia, Pa.

BOLT and ROD CUTTERS

Aircraft-Marine Products, Inc., Harrisburg, Pa.
Beaver Pipe Tools, Inc., Warren, Ohio
Blackhawk Mfg. Co., Milwaukee, Wis.
Champion De Arment Tool Co., Meadville, Pa.
General Scientific Equip. Co., Philadelphia, Pa.
Manco Mfg. Co., Bradley, Ill.
National Machine Tool Co., Racine, Wis.
O'Neil-Irwin Mfg. Co., Lake City, Minn.
Porter, H. K., Inc., Somerville, Mass.
Sandvik Saw & Tool (Division of Sandvik Steel Inc.), New York, N. Y.

BRUSHES, Scratch

(See: "Weld. Cleaning Brushes")

BUFFER-GRINDER, Combination

Balmar, Franklin, Corp., Baltimore, Md.
Bradford Machine Tool Co., The, Cincinnati, Ohio
Cincinnati Electric Tool Co., The, Cincinnati, Ohio

(Continued on next page)

BUFFER-GRINDER

(Continued from page 67)

Delta Power Tool Division of Rockwell Mfg. Co., Milwaukee, Wis.
Divine Brothers Co., Utica, N. Y.
Duro Metal Products Co., Chicago, Ill.
Hammond Machinery Builders, Inc., Kalamazoo, Mich.
Heskins, R. G., Co., Chicago, Ill.
Hoffman, R. W. Co., Inc., Chicago, Ill.
Skil Corp., Chicago, Ill.
Standard Electric Tool Co., The, Cincinnati, Ohio
Stanley Electric Tools, New Britain, Conn.
Strand, N. A. Div., The Balmar Corp., Chicago, Ill.

BUFFING MACHINES, Electric, Portable

Black & Decker Mfg. Co., The, Towson, Md.
Bradford Machine Tool Co., The, Cincinnati, Ohio
Buckeye Tools Corp., Dayton, Ohio
Cincinnati Electrical Tool Co., The, Cincinnati, Ohio
Clark, James, Jr., Electric Co., Louisville, Ky.
Hoffman, R. W. Co., Inc., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.
Mall Tool Co., Chicago, Ill.
Millers Falls Co., Greenfield, Mass.
Rotor Tool Co., Cleveland, Ohio
SKIL Corp., Chicago, Ill.
Sterling Tool Products Co., Chicago, Ill.
Stow Manufacturing Co., Inc., Binghamton, N. Y.
Swartz & White Mfg. Co., Binghamton Flexible Shaft Division, Binghamton, N. Y.
Syntron Co., Homer City, Pa.
United States Electrical Tool Co., The, Cincinnati, Ohio
Valley Electric Corp., St. Louis, Mo.
Walker-Turner Co., Inc., Plainfield, N. J.
Wodack Electric Tool Corp., Chicago, Ill.

BUFFING MACHINES, Flexible Shaft

Balmar, Franklin, Corp., Baltimore, Md.
Bradford Machine Tool Co., The, Cincinnati, Ohio
Heskins, R. G., Co., Chicago, Ill.
Hoffman, R. W. Co., Inc., Chicago, Ill.
Mall Tool Co., Chicago, Ill.
Porter-Cable Mach. Co., Syracuse, N. Y.
Pratt & Whitney, Div., Niles-Bement-Pond Co., West Hartford, Conn.
Stow Manufacturing Co., Inc., Binghamton, N. Y.
Strand, N. A., Div., The Balmar Corp., Chicago, Ill.
Swartz & White Mfg. Co., Binghamton Flexible Shaft Division, Binghamton, N. Y.
United States Electrical Tool Co., The, Cincinnati, Ohio

BUFFING MACHINES, Pneumatic

Aro Equipment Corp., The, Bryan, Ohio
Buckeye Tools Corp., Dayton, Ohio
Cleco Div., Reed Roll Bit Co., Houston, Texas
Divine Brothers Co., Utica, N. Y.
Independent Pneumatic Tool Co., Chicago, Ill.
Mall Tool Co., Chicago, Ill.
Master Pneumatic Tool Co., Inc., Orwell, Ohio
Paasche Airbrush Co., Chicago, Ill.
Rotor Tool Co., The, Cleveland, Ohio
Schramm, Inc., Westchester, Pa.

BUFFING and POLISHING COMPOUNDS

Allen, L. B. Co., Inc., Chicago, Ill.
Cantol Wax Co., Bloomington, Ind.
Carborundum Co., Inc., The, Niagara Falls, N. Y.
Divine Brothers Co., Utica, N. Y.
Flux-All Chemical Products, New York, N. Y.
Nu Steel Co., Chicago, Ill.
Oakite Products, Inc., New York, N. Y.
Sonneborn, L., Sons, Inc., New York, N. Y.

BUFFING and POLISHING STATIONARY MACHINES

Acme Mfg. Co., Detroit, Mich.
Baldor Electric Co., St. Louis Mo.
Black & Decker Mfg. Co., Towson, Md.
Bradford Machine Tool Co., The, Cincinnati, Ohio
Champion Blower & Forge Co., Lancaster, Pa.
Cincinnati Electrical Tool Co., The, Cincinnati, Ohio
Clark, James, Jr., Electric Co., Louisville, Ky.
Clizbe Bros. Mfg. Co., Plymouth, Ind.
Cutter Machine Co., St. Louis, Mo.
Delta Power Tool Division of Rockwell Mfg. Co., Milwaukee, Wis.
Divine Brothers Co., Utica, N. Y.
Duro Metal Products Co., Chicago, Ill.
Hammond Machinery Builders, Inc., Kalamazoo, Mich.
Hoffman, R. W. Co., Inc., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.
Mall Tool Co., Chicago, Ill.
Milwaukee Electric Tool Corp., Milwaukee, Wis.
Robbins & Myers, Inc., Hoist & Crane Division, Springfield, Ohio
Stow Manufacturing Co., Inc., Binghamton, N. Y.
United States Electrical Tool Co., The, Cincinnati, Ohio
Valley Electric Corp., St. Louis, Mo.
Walker-Turner Co., Inc., Plainfield, N. J.

CEMENT, Iron Repair

Hercules Chemical Co., Inc., New York, N. Y.
Smooth-on Mfg. Co., Jersey City, N. J.

CEMENT, Refractory and High Temperature

Armstrong Cork Co., Building Material Div., Lancaster, Pa.
Bay State Abrasive Products Co., Westboro, Mass.
Bottfield Refractories Co., Philadelphia, Pa.
Carborundum Co., The, Niagara Falls, N. Y.
Carey, Philip Mfg. Co., The, Cincinnati, Ohio
Dixon, Joseph, Crucible Co., Jersey City, N. J.
Eagle-Picher Co., The, Cincinnati, Ohio
Ehret Magnesia Mfg. Co., Valley Forge, Pa.
General Refractories Co., Philadelphia, Pa.
Green, A. P., Fire Brick Co., Mexico, Mo.
Harbinson-Walker Refractories Co., Pittsburgh, Pa.
Hercules Chemical Co., Inc., New York, N. Y.
Johns-Manville, New York, N. Y.
Key Co., East St. Louis, Ill.
Laclede-Christy Co., St. Louis, Mo.
Massillon Refractories Co., The, Massillon, Ohio
Mexico Refractories Co., Mexico, Mo.
National Carbon Co., Div. Union Carbide & Carbon Corp., New York, N. Y.
North American Refractories Co., Cleveland, Ohio
Norton Co., Worcester, Mass.
Quigley Co., Inc., New York, N. Y.
Smooth-on Manufacturing Co., Jersey City, N. J.
Titanium Alloy Mfg. Div., National Lead Co., New York, N. Y.
Wagner Mfg. Co., Inc., Jackson, Mo.

CHAIN, Coil

American Chain Division of American Chain & Cable Co., Inc., York, Pa.
Bridgeport Chain & Mfg. Co., The, Bridgeport, Conn.
Cleveland Chain & Mfg. Co., The, Cleveland, Ohio
Columbus McKinnon Chain Corp., Tonawanda, N. Y.
International Chain & Mfg. Co., York, Pa.
Jeffrey Manufacturing Co., The, Columbus, Ohio
Newhall Chain Forge & Iron Co., Westwood, N. J.
Ryerson, Joseph T., & Sons, Inc., Chicago, Ill.
Taylor, S. G., Chain Co., Hammond, Ind.
Western Chain Co., Chicago, Ill.
Yale & Towne Mfg. Co., The (Philadelphia Division), Philadelphia, Pa.

CHAIN HOISTS

Chester Hoist Div., National Screw & Mfg. Co., The, Lisbon, Ohio
Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
Cleveland Crane & Engineering Co., The, Wickliffe, Ohio
Coffing Hoist Co., Danville, Ill.
Columbus-McKinnon Chain Corp., Tonawanda, N. Y.
Conco Engineering Works, Mendota, Ill.
Ford Chain Block Division of American Chain & Cable Co., Inc., York, Pa.
Harnischfeger Corp., Milwaukee, Wis.
Harrington Co., The, Philadelphia, Pa.
Jeffrey Manufacturing Co., The, Columbus, Ohio
Manning, Maxwell & Moore, Inc., Shaw-Box Crane & Hoist Division, Muskegon, Mich
Master Electric Co., The, Dayton, Ohio
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Newhall Chain Forge & Iron Co., Westwood, N. J.
Philadelphia Chain Block & Mfg. Co., Inc., Philadelphia, Pa.
Reading Chain & Block Corp., Reading, Pa.
Robbins & Myers, Inc., Springfield, Ohio
Round, David, and Son, Cleveland, Ohio
Sasgen Derrick Co., Chicago, Ill.
Stephens-Adamson Mfg. Co., Aurora, Ill.
Taylor, S. G., Chain Co., Hammond, Ind.
Wright Hoist Division of American Chain & Cable Co., Inc., York, Pa.
Yale & Towne Mfg. Co., The (Philadelphia Division) Philadelphia, Pa.

CHAIN HOOKS

American Chain Division of American Chain & Cable Co., Inc., York, Pa.
Bethlehem Steel Co., Bethlehem, Pa.
Bridgeport Chain & Mfg. Co., Bridgeport, Conn.
Cleveland Chain & Mfg. Co., Cleveland, Ohio
Columbus-McKinnon Chain Corp., Tonawanda, N. Y.
Durbin-Durco, St. Louis, Mo.
Laughlin, Thomas, Co., Portland, Me.
McKay Co., The, York, Pa.
Newhall Chain Forge & Iron Co., Westwood, N. J.
Taylor, S. G., Chain Co., Hammond, Ind.
Upson-Walton Co., The, Cleveland, Ohio
Western Chain Co., Chicago, Ill.
Wiese Plow Welding Co., Inc., Perry, Iowa
Williams, J. H., & Co., Buffalo, N. Y.
Yale & Towne Mfg. Co., The (Philadelphia Division), Philadelphia, Pa.

CHAIN SLINGS

Columbus McKinnon Chain Corp., Tonawanda, N. Y.
Hercules Sling Co., Rockford, Ill.
International Chain & Mfg. Co., York, Pa.
Manning, Maxwell & Moore, Inc., Shaw-Box Crane & Hoist Div., Muskegon, Mich.
Newhall Chain Forge & Iron Co., Westwood, N. J.
Olympic Glove Co., Inc., The, New York, N. Y.
Paulson-Webber Cordage Corp., New York, N. Y.
Round, David and Son, Cleveland, Ohio
Taylor, S. G., Chain Co., Hammond, Ind.
Youngstown Welding & Engineering Co., The, Youngstown, Ohio

CHIPPERS and PICKS, Scaling

(See: "Chipping & Scaling Hand Hammers")

CHIPPING CHISELS, Hand

Bethlehem Steel Co., Bethlehem, Pa.
Bonney Forge & Tool Works, Allentown, Pa.
Cleco Div. of Reed Roller Bit Co., Houston, Texas
Dallett Co., The, Philadelphia, Pa.
Damascus Steel Products Corp., Rockford, Ill.
Herbrand Tools, Fremont, Ohio
Leetonia Tool Co., The, Leetonia, Ohio
Millers Falls Co., Greenfield, Mass.
Plomb Tool Co., Los Angeles, Calif.
Pyramid Steel Co., Cleveland, Ohio
Quality Tools Corp., New Wilmington, Pa.
Youngstown Welding & Engineering Co., Youngstown, Ohio

CHIPPING CHISELS, Pneumatic and Electric Hammer

Atlas Welding Accessories Co., Ferndale, Mich.
Bethlehem Steel Co., Bethlehem, Pa.
Black & Decker Mfg. Co., The, Towson, Md.
Chicago Pneumatic Tool Co., New York, N. Y.
Cleco Div., Reed Roller Bit Co., Houston, Texas
Dallett Co., The, Philadelphia, Pa.
Damascus Steel Products Corp., Rockford, Ill.
Millers Falls Co., Greenfield, Mass.
Oxford Tool Co., Philadelphia, Pa.
Pyramid Steel Co., Cleveland, Ohio
Quality Tools Corp., New Wilmington, Pa.
Schramm, Inc., West Chester, Pa.
Skil Corp., Chicago, Ill.
Superior Pneumatic Division of Herbrand Tools, Cleveland, Ohio
Syntron Co., Homer City, Pa.
Thor Power Tool Co., Aurora, Ill.
Van Dorn Electric Tool Co., The, Towson, Md.
Wen-Lyn Products, Burbank, Calif.

CHIPPING and SCALING HAMMERS (Electric)

Black & Decker Mfg. Co., The, Towson, Md.
Forney Mfg. Co., Ft. Collins, Colo.
Mall Tool Co., Chicago, Ill.
Master Electric Co., The, Dayton, Ohio
Metal & Thermit Corp., N. Y. 17, N. Y.
Millers Falls Co., Greenfield, Mass.
Pyramid Steel Co., Cleveland, Ohio
SKIL Corp., Chicago, Ill.
Stanley Electric Tools, New Britain, Conn.
Syntron Co., Homer City, Pa.
Thor Power Tool Co., Aurora, Ill.
United States Electrical Tool Co., The, Cincinnati, Ohio
Van Dorn Electric Tool Co., The, Towson, Md.
Wodack Electric Tool Corp., Chicago, Ill.

CHIPPING and SCALING HAMMERS (Hand)

Atlas Welding Accessories Co., Ferndale, Mich.
Bernard Welding Equip., Chicago, Ill.
Bonney Forge & Tool Works, Allentown, Pa.
Champion DeArment Co., Meadville, Pa.
Chicago Mfg. & Distributing Co., Chicago, Ill.

(Continued on next page)

CMD CHIPPING HAMMERS

For EVERY NEED

—Many styles, wood or steel handles, with or without removable brush. Moderately priced. Write for circular W-6.

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NEW DESIGN MAKES THIS WELD CLEANING TOOL BETTER 6 WAYS

Chip and brush with one tool—Better brush angle protects knuckles—Guard protects fingers—Guard holds handle off bench, makes it easier to pick up—New, stronger ribbed frame—Easier brush removal for reversing or replacing.

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Solar steel heads • Induction hardened Silver brazed steel handles Metal or wood grips • Perfect balance

ATLAS WELDING ACCESSORIES CO.
707 E. Lewiston Detroit 20, Mich.

CHIPPING and SCALING HAMMERS (Hand)

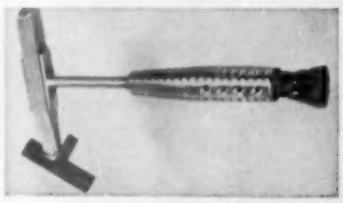
(Continued from page 68)

Churchward Welding Accessories, Jack, North Haven, Conn.
Dallett Co., The, Philadelphia, Pa.
Fairmont Tool and Forging Co., Cleveland, Ohio
Fibre-Metal Products Co., The, Chester, Pa.
Heller Brothers Co., Newark, N. J.
Ideal Industries, Inc., Sycamore, Ill.
Industrial Products Co., Philadelphia, Pa.
Leetonia Tool Co., The, Leetonia, Ohio
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Overly, Chas. F. Co., Cleveland, Ohio
Plumb, Fayette R., Inc., Philadelphia, Pa.
Precision Welder Mfg. Co., Chicago, Ill.
Pyramid Steel Co., Cleveland, Ohio
St. Pierre Chain Co., Worcester, Mass.
Thermacote Welding Prods., Inc., Newark, N. J.
Victor Equipment Co., San Francisco, Calif.
Welding Service Sales, Inc., San Francisco Calif.

CHIPPING and SCALING HAMMERS (Pneumatic)

Aro Equipment Corp., Bryan, Ohio
Buckeye Tools Corp., Dayton, Ohio

BERNARD MULTI-PIC



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Cleans FIVE Times Faster and Better
Six Different Models

BERNARD WELDING EQUIPMENT CO.
10232 Avenue N Chicago 17, Ill.

Chicago Pneumatic Tool Co., New York, N. Y.
Cleco Div., Reed Roller Bit Co., Houston, Texas
Coast Pneumatic Tool Co., Los Angeles, Calif.
Dallett Co., The, Philadelphia, Pa.
Heller Bros., Co., The, Newark, N. J.
Ideal Industries, Inc., Sycamore, Ill.
Ingersoll Rand Co., New York, N. Y.
Keller Tool Co., Grand Rapids, Mich.
Master Pneumatic Tool Co., Inc., Orwell, Ohio
Rotor Tool Co., The, Cleveland, Ohio
Salsbury Corp., Los Angeles, Calif.
Schramm, Inc., West Chester, Pa.
Skil Corp., Chicago, Ill.
Superior Manufacturing Co., Div. of Bingham Herbrand Corp., Cleveland, Ohio
Thor Power Tool Co., Aurora, Ill.
Wen-Lyn Products, Burbank, Calif.

CLAMPS, Adjustable and "C"

Adjustable Clamp Co., Chicago, Ill.
Armstrong Bros. Tool Co., Chicago, Ill.
Atlas Welding Accessories Co., Ferndale, Mich.
B M C Mfg. Corp., Binghamton, N. Y.
Bernard Welding Equipment Co., Chicago, Ill.
Billings & Spencer Co., The, Hartford, Conn.
Black Bros. Co., Inc., The, Mendota, Ill.
Blackhawk Mfg. Co., Milwaukee, Wis.
Bonny Forge & Tool Works, Allentown, Pa.
Brown & Sharpe Mfg. Co., Providence, R. I.
Chicago Boiler Co., Chicago, Ill.
Cincinnati Tool Co., The, Cincinnati, Ohio
Duro Metal Products Co., Chicago, Ill.
Foster Aluminum Alloy Prod. Corp., Forestville, N. Y.
Grand Specialties Co., Chicago, Ill.
Lapeer Mfg. Co., Lapeer, Mich.
McFerron-Myers Products Co., Cleveland, Ohio
Mechanics Engineering Co., Jackson, Mich.
Petersen Mfg. Inc., De Witt, Nebraska
Roesch Tool Products, Los Angeles, Calif.
Sandvik Saw & Tool (Division of Sandvik Steel, Inc.), New York, N. Y.
Seymour Smith & Son, Inc., Oakville, Conn.
Sherman, H. B., Mfg. Co., Battle Creek, Mich.
Siewek Tool Division of Domestic Industries, Inc., Detroit, Mich.
Syracuse Alloy Metals Corp., Syracuse, N. Y.
Wetzler Clamp Co., Long Island City, N. Y.
Williams, J. H., & Co., Buffalo, N. Y.
Wilton Tool Mfg. Co., Chicago, Ill.

CLEANING MACHINES, for Metal Parts

(See also: "Buffing and Polishing Machines")

Ajax Electric Co., Philadelphia, Pa.
American Wheelabrator & Equipment Corp., Mishawaka, Ind.
Cincinnati Electrical Tool Co., The, Cincinnati, Ohio
Gray-Mills Corp., Evanston, Ill.
Ingersoll-Rand Co., New York, N. Y.
Mall Tool Co., Chicago, Ill.
Optimus Equip. Co., Metawan, N. J.
Pangborn Corp., Hagerstown, Md.
Phillips Mfg. Co., Chicago, Ill.
Stow Mfg. Co., Inc., Binghamton, N. Y.

CLEANING TOOLS

(See: "Weld-Cleaning Tools" or "Weld-Cleaning Brushes")

COATED ABRASIVES—Emery, Garnet, Silicon Carbide, Aluminous Oxide, Paper and Cloths

(See also "Sandpaper," "Paper, Waterproof," "Emery and Other Abrasives," etc.)

Abrasive Products, Inc., South Braintree, Mass.
Alberton & Co., Sioux City, Iowa
Armour & Co., Coated Abrasives Div., Chicago, Ill.
Atlas Abrasive Corp., Brooklyn, N. Y.
Bay State Abrasive Products Co. Westboro, Mass.
Behr-Manning Corporation, Troy, N. Y.
Carborundum Co., The, Niagara Falls, N. Y.
Mid-West Abrasive Co., Owosso, Mich.
Minnesota Mining & Mfg. Co., St. Paul, Minn.
Wisconsin Abrasive Co., Milwaukee, Wis.

COLD CHISELS—Cape, Diamond Point and Round Nose

Bethlehem Steel Co., Bethlehem, Pa.
Billings & Spencer Co., The, Hartford, Conn.
Blackford Mfg. Co., Inc., Hartford City, Ind.
Blackhawk Mfg. Co., Milwaukee, Wis.
Bonny Forge & Tool Works, Allentown, Pa.
Cincinnati Tool Co., The, Cincinnati, Ohio
Cleco Div. of Reed Roller Bit Co., Houston, Texas
Crescent Tool Co., Jamestown, N. Y.
Dallett Co., The, Philadelphia, Pa.
Damascus Steel Products Corp., Rockford Ill.

(Continued on next page)

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BERNARD "PRO-CLAMPS"

Pro-Clamps position and hold plates, bars and tubing at any angle from 0° to 360° for welding, brazing or soldering—eliminate tack welding or special fixtures—cut assembly time as much as 50%.

Model B, illustrated, has jaw capacity from 0 to 2½ inches; Model A has jaw capacity from 0 to 1 inch. Get the facts on this new Clamp that really saves you money; write for Bulletin PCB-6, today!

Bernard Welding Equipment Co.
10232 Avenue N, Chicago 17, Ill.

COLD CHISELS

(Continued from page 69)

Duro Metal Products Co., Chicago, Ill.
Heller Brothers Company, Newark, N. J.
Kraeuter & Co., Inc., Newark, N. J.
Mayhew Steel Products, Inc., Shelburne Falls, Mass.
Millers Falls Co., Greenfield, Mass.
Owatonna Tool Co., Owatonna, Minn.
Oxford Tool Co., Philadelphia, Pa.
Peck, Stow & Wilcox Co., The, Southampton, Conn. (Cold only)
Plomb Tool Co., Los Angeles, Calif.
Pyramid Steel Co., Cleveland, Ohio
Quality Tools Corp., New Wilmington, Pa.
Sandvik Saw & Tool (Division of Sandvik Steel, Inc.) New York, N. Y.

COMBINATION SQUARES

Stanley Electric Tools Div. of the Stanley Works, New Britain, Conn.

DEMAGNETIZER

Carboloy Dept., General Electric Co., Detroit, Mich.
Ideal Industries, Inc., Sycamore, Ill.
Shrader, F. W., Co., Culver City, Ind.
Stearn Magnetic, Inc., Milwaukee, Wis.

DIES, Bending and Trimming

Carboloy Dept., General Electric Co., Detroit, Mich.
Dahlstrom Manufacturing Co., St. Paul, Minn.
New England Carbide Tool Co., Inc., Cambridge, Mass.
Niagara Machine & Tool Works, Buffalo, N. Y.
Pyramid Steel Co., Cleveland, Ohio
Service Machine Co., Elizabeth, N. J.
Verson Allsteel Press Co., Chicago, Ill.
Vogel Tool & Die Corp., Melrose Park, Ill.
Warren Alloy, Pontiac, Mich.

DIES, Bolt

Armstrong Bros. Tool Co., Chicago, Ill.
Bay State Tap & Die Co., Mansfield Mass.
Beaver Pipe Tools, Inc., Warren, Ohio
Butterfield Division Union Twist Drill Co., Derby Line, Vt.
Capewell Mfg. Co., The, Hartford, Conn.
Carboloy Dept., General Electric Co., Detroit, Mich.
Card, S. W., Mfg. Co., Division of Union Twist Drill Co., Mansfield, Mass.
Firth Sterling, Inc., Pittsburgh, Pa.
Greenfield Tap & Die Corp., Greenfield, Mass.
Hollands Mfg. Co., Erie, Pa.
Mayhew Steel Products, Inc., Shelburne Falls, Mass.
Morse Twist Drill & Machine Co., New Bedford, Mass.
Nye Tool Co., Chicago, Il.
Oster Manufacturing Co., The, Cleveland, Ohio
Pratt & Whitney Div., Niles-Bement-Pond Co., W. Hartford, Conn.
Reed Manufacturing Co., Erie, Pa.
Ridge Tool Co., The, Elyria, Ohio
Standard Tool Co., Cleveland, Ohio
Toledo Pipe Threading Machine Co., The, Toledo, Ohio
Verson Allsteel Press Co., Chicago, Ill.

DIE STOCK SETS

American Pipe Tool Co., Chicago, Ill.
Armstrong Bros. Tool Co., Chicago, Ill.
Bay State Tap & Die Co., Mansfield, Mass.
Beaver Pipe Tools, Inc., Warren, Ohio
Butterfield Division Union Twist Drill Co., Derby Line, Vt.
Capewell Mfg. Co., The, Hartford, Conn.
Card, S. W. Mfg. Co., Division of Union Twist Drill Co., Mansfield, Mass.
Champion Blower and Forge Co., Lancaster, Pa.
Greenfield Tap & Die Corp., Greenfield, Mass.
Hollands Mfg. Co., Erie, Pa.
Mayhew Steel Products, Inc., Shelburne Falls, Mass.
Morse Twist Drill & Machine Co., New Bedford, Mass.
Nye Tool Co., Chicago, Ill.
Oster Manufacturing Co., The, Cleveland, Ohio
Pratt & Whitney, Div. Niles-Bement-Pond Co., West Hartford, Conn.
Ridge Tool Co., The, Elyria, Ohio
Threadwell Tap & Die Co., Greenfield, Mass.
Toledo Pipe Threading Machine Co., The, Toledo, Ohio

DRILLING MACHINES, Bench

Atlas Press Co., Kalamazoo, Mich.
Black & Decker Mfg. Co., The, Towson, Md.
Blackford Mfg. Co., Inc., Hartford City, Ind.
Boice-Crane Co., Toledo, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Cincinnati Electrical Tool Co., The, Cincinnati, Ohio
Delta Power Tool Division of Rockwell Mfg. Co., Milwaukee, Wis.
Duro Metal Products Co., Chicago, Ill.
Famco Machine Co., Racine, Wis.
Hamilton Tool Co., The, Hamilton, Ohio
Independent Pneumatic Tool Co., Chicago, Ill.
SKIL Corp., Chicago, Ill.
Standard Electrical Tool Co., The, Cincinnati, Ohio
Studebaker Machine Co., Chicago, Ill.
Walker-Turner Co., Inc., Plainfield, N. J.

DRILLING MACHINES—Breast, Chain and Hand

Black & Decker Mfg. Co., The, Towson, Md.
Bradford Machine Tool Co., The, Cincinnati, Ohio
Duro Metal Products Co., Chicago, Ill.
Millers Falls Co., Greenfield, Mass.
SKIL Corp., Chicago, Ill.
Standard Electrical Tool Co., The, Cincinnati, Ohio

DRILLS, Blacksmiths'

Ace Drill Corp., Detroit, Mich.
Besly-Welles Corp., Beloit, Wis.
Buffalo Forge Co., Buffalo, N. Y.
Champion Blower & Forge Co., Lancaster, Pa.
Chicago Latrobe Twist Drill Works, Chicago, Ill.
Clark Equipment Co., Buchanan, Mich.
Cleveland Twist Drill Co., The, Cleveland, Ohio
Morse Twist Drill and Machine Co., New Bedford, Mass.
National Twist Drill & Tool Co., Rochester, Minn.
Standard Tool Co., Cleveland, Ohio
Threadwell Tap & Die Co., The, Greenfield, Mass.
Union Twist Drill Co., Athol, Mass.
Whitman & Barnes, Detroit, Mich.

DRILLS, Electric, Portable

Albertson & Co., Inc., Sioux City, Iowa
Black & Decker Mfg. Co., The, Towson, Md.
Bradford Machine Tool Co., The, Cincinnati, Ohio
Buckeye Tools Corp., Dayton, Ohio
Chicago Pneumatic Tool Co., New York, N. Y.
Cincinnati Electrical Tool Co., The, Cincinnati, Ohio
Clark, James, Jr., Electric Co., Louisville, Ky.
Cummins-Chicago Corp., Chicago, Ill.
Duro Metal Products Co., Chicago, Ill.
Gaston Power Tools, Chicago, Il.
Haskins, R. G., Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
Mall Tool Co., Chicago, Ill.
Millers Falls Co., Greenfield, Mass.
Milwaukee Electric Tool Corp., Milwaukee, Wis.
Misener Mfg. Co., Inc., Syracuse, N. Y.
Portable Electric Tools, Inc., Chicago, Ill.
Porter Cable Machine Co., Syracuse, N. Y.
Rotor Tool Co., The, Cleveland, Ohio
Skil Corp., Chicago, Ill.
Speedway Mfg. Co., Cicero, Ill.
Standard Electrical Tool Co., The, Cincinnati, Ohio
Stanley Electrical Tool Division, The Stanley Works, New Britain, Conn.
Stow Manufacturing Co., Inc., Binghamton, N. Y.
Syntron Company, Homer City, Pa.
Thor Power Tool Co., Aurora, Ill.
United States Electrical Tool Co., The, Cincinnati, Ohio
Van Dorn Electric Tool Co., The, Towson, Md.
Wodack Electric Tool Corp., Chicago, Ill.

DRILL-GRINDING ATTACHMENT

Atlas Press Co., Kalamazoo, Mich.
Delta Power Tool Div., Rockwell Mfg. Co., Milwaukee, Wis.
Dumore Co., Racine, Wis.
Hisey-Wolf Machine Co., Cincinnati, Ohio
Hoffman, R. W. Co., Inc., Chicago, Ill.
McBurney, A. D., Los Angeles, Calif.
Millers Falls Co., Greenfield, Mass.
Skil Corp., Chicago, Ill.
Standard Elec. Tool Co., The, Cincinnati, Ohio

DRILLS, Pneumatic, Portable

Bellows Co., Akron, Ohio
Black & Decker Mfg. Co., The, Towson, Md.
Buckeye Tools Corp., Dayton, Ohio
Chicago Pneumatic Tool Co., New York, N. Y.
Cleco Div., Reed Roller Bit Co., Houston, Tex.
Dallett Co., The, Philadelphia, Pa.
Keller Tool Co., Grand Haven, Mich.
Mall Tool Co., Chicago, Ill.
Master Penumatic Tool Co., Inc., Orwell, Ohio
Rotor Tool Co., Cleveland, Ohio
Skil Corp., Chicago, Ill.
Thor Power Tool Co., Aurora, Ill.
Van Dorn Tool Co., Towson, Md.

DRILLS, Twist

Ace Drill Corp., Detroit, Mich.
Ampco Twist Drill Co., Jackson, Mich.
Bay State Tap & Die Co., Mansfield, Mass.
Besly-Welles Corp., Beloit, Wis.
Chicago Latrobe Twist Drill Works, Chicago, Ill.
Clark Equipment Co., Buchanan, Mich.
Cleveland Twist Drill Co., The, Cleveland, Ohio
Cogsdill Twist Drill Co., Detroit, Mich.
Do All Co., The, Des Plaines, Ill.
Greenfield Tap & Die Corp., Greenfield, Mass.
Herbrand Tools, Fremont, Ohio
Morse Twist Drill & Machine Co., New Bedford, Mass.
National Twist Drill & Tool Co., Rochester, Minn.
Pratt & Whitney, Div. Niles-Bement-Pond Co., West Hartford, Conn.
Ragle, J. M. Industries, Kansas City, Mo.
Republic Drill & Tool Co., Chicago, Ill.
Standard Tool Co., Cleveland, Ohio
Threadwell Tap & Die Co., Greenfield, Mass.
Union Twist Drill Co., Athol, Mass.
Vascoloy-Ramet Corp., Waukegan, Ill.
Whitman & Barnes, Detroit, Mich.

DROP FORGED HOIST HOOKS

American Chain Division of American Chain & Cable Co., Inc., York, Pa.
Bethlehem Steel Co., Bethlehem, Pa.
Billings & Spencer Co., Hartford, Conn.
Cleveland Chain & Mfg. Co., Cleveland, Ohio
Columbus-McKinnon Chain Corp., Tonawanda, N. Y.
Ford Chain Block Division of American Chain & Cable Co., Inc., Philadelphia, Pa.
Laughlin, Thomas, Co., Portland, Me.
McKay Co., The, York, Pa.
Newhall Chain Forge & Iron Co., Westwood, N. J.
Roebling's, John A., Sons Co., Trenton, N. J.
Taylor, S. G., Chain Co., Hammond, Ind.
Upson-Walton Co., The, Cleveland, Ohio
Wickwire Spencer Steel Division, The Colorado Fuel & Iron Corp., Buffalo, N. Y.
Wilcox, Crittenden & Co., Inc., Middletown, Conn.
Williams, J. H., & Co., Buffalo, N. Y.
Yale & Towne Mfg. Co., The (Philadelphia Division), Philadelphia, Pa.

ELECTRIC HOISTS

American Hoist & Derrick Co., St. Paul, Minn.
Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
Coffing Hoist Co., Danville, Ill.
Columbus-McKinnon Chain Corp., Tonawanda, N. Y.
Conco Engineering Works, Mendota, Ill.
Detroit Hoist & Machine Co., Detroit, Mich.
Ford Chain Block Division of American Chain & Cable Co., Inc., York, Pa.
Harnischfeger Corp., Milwaukee, Wis.
Harrington Co., The, Philadelphia, Pa.
Ingersoll-Rand Co., New York, N. Y.
Jeffrey Manufacturing Co., The, Columbus, Ohio
Joy Mfg. Co., Pittsburgh, Pa.
Manning, Maxwell & Moore, Inc., Shaw-Box Crane & Hoist Division, Muskegon, Mich.
Master Electric Co., The, Dayton, Ohio
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Northern Engineering Works, Detroit, Mich.
Reading Chain & Block Corp., Reading, Pa.
Revolvator Co., North Bergen, N. J.
Robbins & Meyers, Inc., Springfield, Ohio
Round, David and Son, Cleveland, Ohio
Sasgen Derrick Co., Chicago, Ill.
Stearns-Roger Mfg. Co., Denver, Colo.
Stephens-Adamson Mfg. Co., Aurora, Ill.
Stryco Mfg. Co., San Francisco, Calif.
Whiting Corp., Harvey, Ill.
Wright Hoist Division of American Chain & Cable Co., Inc., York, Pa.
Yale & Towne Mfg. Co., The (Philadelphia Division) Philadelphia, Pa.

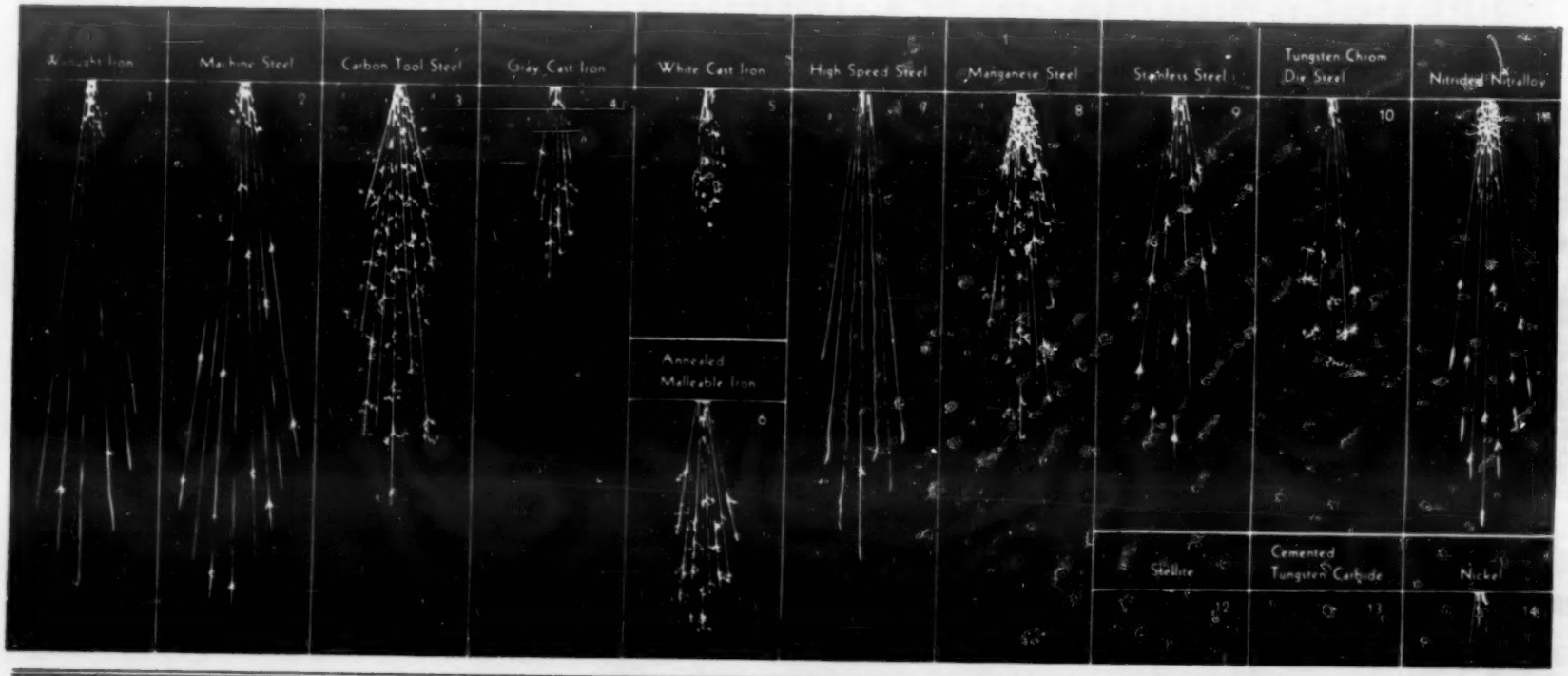
ELECTRIC and PNEUMATIC, PORTABLE SAWS

Black & Decker Mfg. Co., The, Towson, Md.
Bradford Machine Tool Co., The, Cincinnati, Ohio
Chicago Pneumatic Tool Co., New York, N. Y.
Cummins-Chicago Corp., Chicago, Ill.
Heston & Anderson, Fairfield, Iowa
Ingersoll-Rand Co., New York, N. Y.
Mall Tool Co., Chicago, Ill.
Millers Falls Co., Greenfield, Mass.
Milwaukee Electric Tool Corp., Milwaukee, Wis.
SKIL Corp., Chicago, Ill.
Stanley Electric Tools, Div. of the Stanley Works New Britain, Conn.
Thor Power Tool Co., Aurora, Ill.
Van Dorn Electric Tool Co., Towson, Md.
Wysenbeek & Staff, Inc., Chicago, Ill.

EMERY and Other Abrasives

Abrasive Products, Inc., South Braintree, Mass.
Armour Sandpaper Works, Chicago, Ill.
Bay State Abrasive Products, Westboro, Mass.
Behr-Manning Corp., Troy, N. Y.
Carborundum Co., The, Niagara Falls, N. Y.
Chicago Wheel & Mfg. Co., Chicago, Ill.
Haskins, R. G., Co., Chicago, Ill.
Hoffman, R. W. Co., Inc., Chicago, Ill.
Macklin Co., Jackson, Mich.
Michigan Abrasive Co., Detroit, Mich.
Mid-West Abrasive Co., Owosso, Mich.
Minnesota Mining & Mfg. Co., St. Paul, Minn.
Norton Co., Worcester, Mass.
Pennsylvania Optical Co., Reading, Pa.
Simonds Worden White Co., Dayton, Ohio.

Characteristics of Sparks Generated by the Grinding of Metals



	Metal	Volume of Stream	Relative Length of Stream, Inches†	Color of Stream Close to Wheel	Color of Streaks Near End of Stream	Quantity of Spurts	Nature of Spurts	
1.	Wrought iron	Large	65	Straw	White	Very few	Forked	1.
2.	Machine steel	Large	70	White	White	Few	Forked	2.
3.	Carbon tool steel	Moderately large	55	White	White	Very many	Fine, repeating	3.
4.	Gray cast iron	Small	25	Red	Straw	Many	Fine, repeating	4.
5.	White cast iron	Very small	20	Red	Straw	Few	Fine, repeating	5.
6.	Annealed mall. iron	Moderate	30	Red	Straw	Many	Fine, repeating	6.
7.	High speed steel	Small	60	Re.	Straw	Extremely few	Forked	7.
8.	Manganese steel	Moderately large	45	White	White	Many	Fine, repeating	8.
9.	Stainless steel	Moderate	50	Straw	White	Moderate	Forked	9.
10.	Tungsten-chromium die steel	Small	35	Red	Straw*	Many	Fine, repeating	10.
11.	Nitrided Nitralloy	Large (curved)	55	White	White	Moderate	Forked	11.
12.	Stellite	Very small	10	Orange	Orange	None		12.
13.	Cemented tungsten carbide	Extremely small	2	Light Orange	Light Orange	None		13.
14.	Nickel	Very small**	10	Orange	Orange	None		14.
15.	Copper, brass, aluminum	None				None		15.

†Figures obtained with 12" wheel on bench stand and are relative only. Actual length in each instance will vary with grinding wheel, pressure, etc. *Blue-white spurts. **Some wavy streaks.

(Reprinted from (Norton Co.) "Grits and Grinds" June 1940)

Hardness Conversion Table

BRINELL			ROCKWELL			
Dia. in mm., 3000 kg. load 10 mm. ball	Hardness No.	Vickers or Firth Hardness No.	C 150 kg. load 120° Diamond Cone	B 100 kg. load 1/16 in. dia. ball	Scleroscope No.	Tensile Strength 1000 psi.
2.05	898					440
2.10	857					420
2.15	817					401
2.20	780	1150	70		106	384
2.25	745	1050	68		100	368
2.30	712	960	66		95	352
2.35	682	885	64		91	337
2.40	653	820	62		87	324
2.45	627	765	60		84	311
2.50	601	717	58		81	298
2.55	578	675	57		78	287
2.60	555	633	55	120	75	276
2.65	534	598	53	119	72	266
2.70	514	567	52	119	70	256
2.75	495	540	50	117	67	247
2.80	477	515	49	117	65	238
2.85	461	494	47	116	63	229
2.90	444	472	46	115	61	220
2.95	429	454	45	115	59	212
3.00	415	437	44	114	57	204
3.05	401	420	42	113	55	196
3.10	388	404	41	112	54	189
3.15	375	389	40	112	52	182
3.20	363	375	38	110	51	176
3.25	352	363	37	110	49	170
3.30	341	350	36	109	48	165
3.35	331	339	35	109	46	160
3.40	321	327	34	108	45	155
3.45	311	316	33	108	44	150
3.50	302	305	32	107	43	146
3.55	293	296	31	106	42	142
3.60	285	287	30	105	40	138
3.65	277	279	29	104	39	134
3.70	269	270	28	104	38	131
3.75	262	263	26	103	37	128
3.80	255	256	25	102	37	125
3.85	248	248	24	102	36	122
3.90	241	241	23	100	35	119
3.95	235	235	22	99	34	116
4.00	229	229	21	98	33	113
4.05	223	223	20	97	32	110
4.10	217	217	18	96	31	107
4.15	212	212	17	96	31	104
4.20	207	207	16	95	30	101
4.25	202	202	15	94	30	99
4.30	197	197	13	93	29	97
4.35	192	192	12	92	28	95
4.40	187	187	10	91	28	93
4.45	183	183	9	90	27	91
4.50	179	179	8	89	27	89
4.55	174	174	7	88	26	87
4.60	170	170	6	87	26	85
4.65	166	166	4	86	25	83
4.70	163	163	3	85	25	82
4.75	159	159	2	84	24	80
4.80	156	156	1	83	24	78
4.85	153	153		82	23	76
4.90	149	149		81	23	75
4.95	146	146		80	22	74
5.00	143	143		79	22	72
5.05	140	140		78	21	71
5.10	137	137		77	21	70
5.15	134	134		76	21	68
5.20	131	131		74	20	66
5.25	128	128		73	20	65
5.30	126	126		72		64
5.35	124	124		71		63
5.40	121	121		70		62
5.45	118	118		69		61
5.50	116	116		68		60
5.55	114	114		67		59
5.60	112	112		66		58
5.65	109	109		65		56
5.70	107	107		64		56
5.75	105	105		62		54
5.80	103	103		61		53
5.85	101	101		60		52
5.90	99	99		59		51
5.95	97	97		57		50
6.00	95	95		56		49

EXTRACTORS, Bolt and Screw

Bonny Forge & Tool Works, Allentown, Pa.
Chicago Latrobe Twist Drill Works, Chicago, Ill.
Cleveland Twist Drill Co., The, Cleveland, Ohio.
Duro Metal Products Co., Chicago, Ill.
Greenfield Tap & Die Corp., Greenfield, Mass.
Owatonna Tool Co., Owatonna, Minn.
Plomb Tool Co., Los Angeles, Calif.
Quality Tools Corp., New Wilmington, Pa.
Ridge Tool Co., The, Elyria, Ohio (Also pipe.)
Standard Tool Co., Cleveland, Ohio.
Whitman & Barnes, Detroit, Mich.

FILES

Aro Equipment Corp., The, Bryan, Ohio.
Atkins & Co., E. C., Indianapolis, Ind.
Carson-Newton Co., Belleville, N. J.
Delta File Works, Inc., Philadelphia, Pa.
Disston, Henry, & Sons, Inc., Tacony, Philadelphia, Pa.
DoAll Co., The, Des Plaines, Ill.
Dremel Mfg. Co., Racine, Wis.
Elliott Mfg. Co., New York, N. Y.
Flint Prod. Co., Brooklyn, N. Y.
Ford, M. A., Mfg. Co., Inc., Davenport, Iowa.
Graham Rotary File & Tool Co., Philadelphia, Pa.
Grobet File Co. of America, New York, N. Y.
Haskins, R. G., Co., Chicago, Ill.
Heller Brothers Co., Newark, N. J.
Ideal Industries, Inc., Sycamore, Ill.
Jarvis, Charles L., Co., Middletown, Conn.
Nicholson File Co., Providence, R. I.
Plumb, Fayette R., Inc., Philadelphia, Pa.
Pratt & Whitney, Div. Niles-Bement-Pond Co., West Hartford, Conn.
Stow Mfg. Co., Binghamton, N. Y.
Strand, N. A., Div. The Balmar Corp., Chicago, Ill.

FILE CLEANERS

Cincinnati Tool Co., The, Cincinnati, Ohio
Disston, Henry, & Son, Inc., Tacony, Philadelphia, Pa.
Heller Brothers Company, Newark, N. J.
Knudson, E. C., Chicago, Ill.
Lutz File & Tool Co., Cincinnati, Ohio
Manufacturers' Brush Co., The, Cleveland, Ohio
Nicholson File Co., Providence, R. I.

FILE HOLDERS

Disston, Henry, & Sons, Inc., Tacony, Philadelphia, Pa.
Nicholson File Co., Providence, R. I.
Plomb Tool Co., Los Angeles, Calif.
Swiss Laboratory, Cleveland, Ohio

FIRE BRICK

Armstrong Cork Co., Building Material Div., Lancaster, Pa.
Botfield Refractories Company, Philadelphia, Pa.
Carborundum Co., The, Niagara Falls, N. Y.
Cleveland Quarries Co., The, Cleveland, Ohio
General Refractories Co., Philadelphia, Pa.
Green, A. P., Fire Brick Co., Mexico, Mo.
Harbison-Walker Refractories Co., Pittsburgh, Pa.
Johns-Manville, New York, N. Y.
Laclede-Christy Co., St. Louis, Mo.
Massillon Refractories Co., The, Massillon, Ohio
Mexico Refractories Co., Mexico, Mo.
Niles Fire Brick Co., The, Niles, Ohio
North American Refractories Co., Cleveland, Ohio
Norton Co., Worcester, Mass.
Plibrico Jointless Firebrick Co., Chicago, Ill.
Quigley Company, Inc., New York, N. Y.

FIRE BRICK CEMENT

Armstrong Cork Co., Building Material Div., Lancaster, Pa.
Botfield Refractories Co., Philadelphia, Pa.
Green Co., A. P., Mexico, Mo.
Johns-Manville, New York, N. Y.
Laclede-Christy Co., St. Louis, Mo.
North American Refractories Co., Cleveland, Ohio
Norton Co., Worcester, Mass.
Wagner Mfg. Co., Inc., Jackson, Mo.

FLANGING MACHINES

Barth Mfg. Co., The, Milldale, Conn.
Kling Bros. Engineering Works, Chicago, Ill.
McCabe Mfg. Co., Lawrence, Mass.
Niagara Mach. & Tool Works, Buffalo, N. Y.
Tube Turns, Inc., Louisville, Ky.

FLEXIBLE SHAFTS

Albertson & Co., Inc., Sioux City, Iowa
Balmar, Franklin, Corp., Baltimore, Md.
Duro Metal Products Co., Chicago, Ill.
Elliott Manufacturing Co., Binghamton, N. Y.
Haskins, R. G., Co., Chicago, Ill.
Jefferson Engineering & Mfg. Co., Detroit, Mich.
Jeffrey Mfg. Co., The, Columbus, Ohio
Mall Tool Co., Chicago, Ill.
Master Electric Co., The, Dayton, Ohio
Pratt & Whitney Div. Niles-Bement-Pond Co., West Hartford, Conn.
Stow Manufacturing Co., Binghamton, N. Y.
Strand, N. A., Div., The Balmar Corp., Chicago, Ill.
Swartz & White Mfg. Co., Binghamton Flexible Shaft Division, Binghamton, N. Y.
United States Electrical Tool Co., The, Cincinnati, Ohio
Walker-Turner Co., Inc., Plainfield, N. J.

FLEXIBLE SHAFT MACHINES

Albertson & Co., Sioux City, Iowa
Balmar, Franklin, Corp., Baltimore, Md.
Bradford Machine Tool Co., The, Cincinnati, Ohio
Dumore Co., The, Racine, Wis.
Duro Metal Products Co., Chicago, Ill.
Elliott Manufacturing Co., Binghamton, N. Y.
Foredom Electric Co., New York, N. Y.
Haskins, R. G., Co., Chicago, Ill.
Hoffman, R. W. Co., Inc., Chicago, Ill.
Ideal Industries, Inc., Sycamore, Ill.
Jarvis, Chas. L., Co., Middletown, Conn.
Jefferson Engineering & Mfg. Co., Detroit, Mich.
Mall Tool Co., Chicago, Ill.
Master Vibrator Co., Dayton, Ohio
Pratt & Whitney Div., Niles-Bement-Pond Co., West Hartford, Conn.
Stow Manufacturing Co., Inc., Binghamton, N. Y.
Strand, N. A., Div., The Balmar Corp., Chicago, Ill.
Swartz & White Mfg. Co., Binghamton Flexible Shaft Division, Binghamton, N. Y.
United States Electrical Tool Co., The, Ciacinnati, Ohio
Walker-Turner Co., Inc., Plainfield, N. J.
Wyzenbeek & Staff, Inc., Chicago, Ill.

FLEXIBLE SHAFT SANDERS

Balmar, Franklin, Corp., Baltimore, Md.
Elliott Mfg. Co., Binghamton, N. Y.
Haskins, R. G., Co., Chicago, Ill.
Hoffman, R. W. Co., Inc., Chicago, Ill.
Jarvis, Chas. L., Co., Middletown, Conn.
Mall Tool Co., Chicago, Ill.
Pratt & Whitney Div., Niles-Bement-Pond Co., W. Hartford, Conn.
Stow Mfg. Co., Binghamton, N. Y.
Strand, N. A., Div., The Balmar Corp., Chicago, Ill.
Wyzenbeek & Staff, Inc., Chicago, Ill.

FLUE and TUBE CUTTERS

American Pipe Tool Co., Chicago, Ill.
Calder Mfg. Co., Lancaster, Pa.
Parker Appliance Co., The, Cleveland, Ohio
Vincent Steel Process Co., Detroit, Mich.

FOLDING RULES

Atlas Welding Accessories Co., Ferndale, Mich.
Brown & Sharpe Mfg. Co., Providence, R. I.
Carlson & Sullivan, Inc., Monrovia, Calif.
Greene, Tweed & Co., North Wales, Pa.
Keuffel & Esser Co., Hoboken, N. J.
Lufkin Rule Co., The, Saginaw, Mich.
Master Rule Mfg. Co., Inc., White Plains, N. Y.
Millers Falls Co., Greenfield, Mass.
Niagara Machine & Tool Works, Buffalo, N. Y.
Stanley Tools Division of The Stanley Works, New Britain, Conn.
Starrett, L. S., Co., The, Athol, Mass.

FORGES, Portable

Buffalo Forge Co., Buffalo, N. Y.
Champion Blower & Forge Co., Lancaster, Pa.
Eclipse Fuel Engineering Co., Rockford, Ill.
Mohr Mfg. Co., Div. Diamond Iron Works, Inc., Minneapolis, Minn.
R. S. Products Corp., Philadelphia, Pa.
Sunbeam-Stewart Furnace Division, Sunbeam Corp., Chicago, Ill.

GEARED HOISTS

Chester Hoist Div., National Screw & Mfg. Co., The Lisbon, Ohio
Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
Coffing Hoist Co., Danville, Ill.
Columbus-McKinnon Chain Corp., Tonawanda, N. Y.
Conco Engineering Works, Mendota, Ill.
Harrington Co., The, Philadelphia, Pa.
Manning, Maxwell & Moore, Inc., Shaw-Box Crane and Hoist Division, Muskegon, Mich.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Northern Engineering Works, Detroit, Mich.
Philadelphia Chain Block & Mfg. Co., Inc., Philadelphia, Pa.
Reading Chain & Block Corp., Reading, Pa.
Robbins & Meyers, Inc., Springfield, Ohio
Round, David, and Son, Cleveland, Ohio
Sasgen Derrick Co., Chicago, Ill.
Stryco Mfg. Co., San Francisco, Calif.
Whiting Corp., Harvey, Ill.
Wright Hoist Division of American Chain & Cable Co., Inc., York, Pa.
Yale & Towne Mfg. Co., The (Philadelphia Division), Philadelphia, Pa.

GEARED TROLLEY HOISTS

Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
Cleveland Crane & Engineering Co., Wickliffe, Ohio
Coffing Hoist Co., Danville, Ill.
Columbus-McKinnon Chain Corp., Tonawanda, N. Y.
Conco Engineering Works, Mendota, Ill.
Detroit Hoist & Machine Co., Detroit, Mich.
Ford Chain Block Division of American Chain & Cable Co., Inc., York, Pa.
Harnischfeger Corp., Milwaukee, Wis.
Harrington Co., The, Philadelphia, Pa.
Industrial Equipment Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
Manning, Maxwell & Moore, Inc., Shaw-Box Crane & Hoist Div., Muskegon, Mich.
Master Electric Co., The, Dayton, Ohio
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Northern Engineering Works, Detroit, Mich.
Philadelphia Chain Block & Mfg. Co., Inc., Philadelphia, Pa.
Reading Chain & Block Corp., Reading, Pa.
Robbins & Meyers, Inc., Springfield, Ohio
Round, David, and Son, Cleveland, Ohio
Stryco Mfg. Co., San Francisco, Calif.
Whiting Corp., Harvey, Ill.
Wright Hoist Division of American Chain & Cable Co., Inc., York, Pa.
Yale & Towne Mfg. Co., The (Philadelphia Division), Philadelphia, Pa.

GENERAL PURPOSE RELAYS

Arrow, Hart & Hegeman Elec. Co., Hartford, Conn.
Automatic Temperature Control Co., Philadelphia, Pa.
Clare, C. P., & Co., Chicago, Ill.
Clark Controller Co., Cleveland, Ohio
Electric Controller & Mfg. Co., The, Cleveland, Ohio
General Electric Co., Schenectady, N. Y.
Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.
National Time & Signal Corp., Detroit, Mich.
Photoswitch, Inc., Cambridge, Mass.
Square D Co., Milwaukee, Wisc.
Westinghouse Elec. Corp., Pittburgh, Pa.
Weston Electrical Corp., Newark, N. J.

GRINDERS, Bench and Floor

Albertson & Co., Sioux City, Iowa
Aro Equipment Corp., The, Bryan, Ohio
Atlas Press Co., Kalamazoo, Mich.
Baldor Electric Co., St. Louis, Mo.
Balmar, Franklin, Corp., Baltimore, Md.
Black & Decker Mfg. Co., The, Towson, Md.
Blackford Mfg. Co., Inc., Hartford City, Ind.
Bradford Machine Tool Co., The, Cincinnati, Ohio
Champion Blower and Forge Co., Lancaster, Pa.
Cincinnati Electrical Tool Co., The, Cincinnati, Ohio
Clark, James, Jr., Electric Co., Louisville, Ky.
Clizbe Bros. Mfg. Co., Plymouth, Ind.
Cutter Machine Co., St. Louis, Mo. (Floor only)
Delta Power Tool Division of The Rockwell Mfg. Co., Milwaukee, Wis.
Do-All Co., The, Des Plaines, Ill.
Dumore Co., The, Racine, Wis.
Foley Mfg. Co., Minneapolis, Minn.
Hammond Machinery Builders, Inc., Kalamazoo, Mich.
Hisey-Wolf Mach. Co., The, Cincinnati, Ohio
Master Electric Co., The, Dayton, Ohio
Millers Falls Co., Inc., Greenfield, Mass.
Minnesota Mining & Mfg. Co., St. Paul, Minn.
Misener Mfg. Co., Inc., Syracuse, N. Y.
Peterson Welding Laboratories, Kansas City, Mo.
Porter-Cable Mach. Co., Syracuse, N. Y.
Ryman Engineering Co., Inc., Ellwood City, Pa.
SKIL Corp., Chicago, Ill.
Speedway Mfg. Co., Cicero, Ill.
Standard Electrical Tool Co., The, Cincinnati, Ohio
Stow Manufacturing Co., Inc., Binghamton, N. Y.
Thor Power Tool Co., Aurora, Ill.
United States Electrical Tool Co., The, Cincinnati, Ohio
Valley Electric Corp., St. Louis, Mo.
Walker-Turner Co., Inc., Plainfield, N. J.

GRINDERS, Electric, Portable

Baldor Electric Co., St. Louis, Mo.
Balmar, Franklin, Corp., Baltimore, Md.
Black & Decker Mfg. Co., The, Towson, Md.
Buckeye Tools Corp., Dayton, Ohio
Chicago Pneumatic Tool Co., New York, N. Y.
Chicago Wheel & Mfg. Co., Chicago, Ill.
Cincinnati Electrical Tool Co., The, Cincinnati, Ohio
Dremel Manufacturing Co., Racine, Wis.
Elliott Mfg. Co., Binghamton, N. Y.
Erico Products Inc., Cleveland, Ohio
Haskins, R. G., Co., Chicago, Ill.
Hisey-Wolf Machine Co., Cincinnati, Ohio
Mall Tool Co., Chicago, Ill.
Master Pneumatic Tool Co., Inc., Orwell, Ohio
McGonegal Manufactering Co., The, East Rutherford, N. J.
Miller Falls Co., Greenfield, Mass.
Milwaukee Electric Tool Corp., Milwaukee, Wis.

(Continued on next page)

GRINDERS, Electric, Portable

(Continnued from page 71)

Portable Electric Tools, Inc., Chicago, Ill.
Porter-Cable Mfg. Co., Syracuse, N. Y.
Rotor Tool Co., Cleveland, Ohio
SKIL Corp., Chicago, Ill.
Speedway Mfg. Co., Cicero, Ill.
Stanley Electric Tool Division, The Stanley Works, New Britain, Conn.
Stow Manufacturing Co., Inc., Binghamton, N. Y.
Thor Power Tool Co., Aurora, Ill.
United States Electrical Tool Co., The, Cincinnati, Ohio
Wodack Electric Tool Corp., Chicago, Ill.
Wyzenbeek & Staff, Inc., Chicago, Ill.

GRINDERS, Flexible Shaft

Albertson & Co., Sioux City, Iowa
Balmar, Franklin, Corp., Baltimore, Md.
Bradford Machine Tool Co., The, Cincinnati, Ohio
Duro Metal Products Co., Chicago, Ill.
Elliott Mfg. Co., Binghamton, N. Y.
Haskins, R. G. Co., Chicago, Ill.
Mall Tool Co., Chicago, Ill.
Master Electric Co., The, Dayton, Ohio
Master Vibrator Co., Dayton, Ohio
Stow Manufacturing Co., Inc., Binghamton, N. Y.
Strand, N. A., Div. The Balmar Corp., Chicago, Ill.
Swartz & White Mfg. Co., Binghamton Flexible Shaft Division, Binghamton, N. Y.
United States Electrical Tool Co., The, Cincinnati, Ohio
Walker-Turner Co., Inc., Plainfield, N. J.
Wyzenbeek & Staff, Inc., Chicago, Ill.

GRINDERS, Pneumatic, Portable

Aro Equipment Corp., The, Bryan, Ohio
Buckeye Tools Corp., Dayton, Ohio
Chicago Pneumatic Tool Co., New York, N. Y.
Cleco Div., Reed Roller Bit Co., Houston, Texas
Independent Pneumatic Tool Co., Aurora, Ill.
Ingersoll-Rand Co., New York, N. Y.
Keller Tool Co., Grand Haven, Mich.
M-B Products, Detroit, Mich.
Mall Tool Co., Chicago, Ill.
Master Pneumatic Tool Co., Inc., Orwell, Ohio
Robertson Mfg. Co., Morrisville, Pa.
Rotor Tool Co., Cleveland, Ohio
Sheldon Machine Co., Chicago, Ill.
Thor Power Tool Co., Aurora, Ill.

GRINDING WHEELS

Bay State Abrasive Products Co., Westboro, Mass.
Behr-Manning Corp., Troy, N. Y.
Besly-Welles Corp., Beloit, Wis.
Bridgeport Safety Emery Wheel Co., Inc., The, Bridgeport, Conn.
The Carborundum Co., Niagara Falls, N. Y.
Chicago Wheel & Mfg. Co., Chicago, Ill.
Cincinnati Milling Machine Co., Grinding Wheels Div., Cincinnati 9, Ohio
Colonial Abrasive Products Co., Conshohocken, Pa.
Cortland Grinding Wheels Corp., Chester, Mass.
Cratex Mfg. Co., San Francisco, Calif.
de Senno, A. P., & Son, Inc., Phoenixville, Pa.
Hoffman, R. W., Co., Inc., Chicago, Ill.
Macklin Co., Jackson, Mich.
Metal Removal Co., Chicago, Ill.
Mid-West Abrasive Co., Owosso, Mich.
Norton Co., Worcester, Mass.
Nu-Matic Grinders, Inc., Cleveland, Ohio
Peninsular Grinding Wheel Co., The, Detroit, Mich.
Raybestos-Manhattan, Inc., Passaic, N. J.
Robertson Mfg. Co., Morrisville, Pa.
Sandusky Abrasive Wheel Co., Kalamazoo, Mich.
Simonds Abrasive Co., Philadelphia, Pa.
Simonds Worden White Co., Dayton, Ohio
Sterling Grinding Wheel Div., of the Cleveland Quarries Co., Tiffin, Ohio
Universal Wheel & Abrasive Corp., Chicago, Ill.
Weldon Roberts Rubber Co., Newark, N. J.
Wisconsin Abrasive Co., Milwaukee, Wis.

GRINDING WHEEL DRESSERS

Bay State Abrasive Prod. Co., Westboro, Mass.
Black & Decker Mfg. Co., The, Towson, Md.
Calder Mfg. Co., Lancaster, Pa.
Carboloy Dept., General Electric Co., Detroit, Mich.
Collmer Bros., South Bend, Ind.
Desmond-Stephen Mfg. Co., Urbana, Ohio
Macklin Co., Jackson, Mich.
Norton Co., Worcester, Mass.
Pratt & Whitney Div., Niles-Bement Pond Co., West Hartford, Conn.
Standard Elec. Tool Co., The, Cincinnati, Ohio
Standard Tool Co., Cleveland, Ohio
Vincent Steel Process Co., Detroit, Mich.
Willey's Carbide Tool Co., Detroit, Mich.
Wisconsin Abrasive Co., Milwaukee, Wis.

GRIT-BLASTING EQUIPMENT

American Wheelabrator & Eqpt. Corp., Mishawaka, Ind.
Metallizing Co. of America, Inc., Chicago, Ill.
Metallizing Engineering Co., Inc., Long Island City, N. Y.
Persons Engr. Corp., Cleveland, Ohio
Ruemelin Mfg. Co., Milwaukee, Wis.
Vacu-Blast Co., Inc., Belmont, Calif.

HACK SAW MACHINES

Armstrong-Blum Mfg. Co., Chicago, Il.
Johnson Mfg. Co., New York, N. Y.
Mid-States Welder Mfg. Co., Chicago, Ill.
Peerless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.
Sales Service Machine Tool Co., St. Paul, Minn.
SKIL Corp., Chicago, Ill.
Syntron Co., Homer City, Pa.
Wells Manufacturing Corp., Three Rivers, Mich.
Wyzenbeek & Staff, Inc., Chicago, Ill.

HACK SAWS (Hand Blades)

American Saw & Mfg. Co., Springfield, Mass.
Armstrong-Blum Mfg. Co., Chicago, Ill.
Atkins, E. C. and Co., Indianapolis, Ind.
Atlas Welding Accessories Co., Ferndale, Mich.
Barnes, W. O., Co., Inc., Detroit, Mich.
Blackhawk Mfg. Co., Milwaukee, Wis.
Bonny Forge & Tool Works, Allentown, Pa.
Capewell Mfg. Co., The, Hartford, Conn.
Clemson Bros., Middletown, N. Y.
Crescent Tool Co., Jamestown, N. Y.
Diamond Saw Works, Inc., Buffalo, N. Y.
Disston Henry, & Sons, Inc., Tacony, Philadelphia, Pa.
DoAll Co., The, Des Plaines, Ill.
Forsberg Mfg. Co., The, Bridgeport, Conn.
Griffin, G. W., Co., Franklin, N. H.
McBurney, A. D., Los Angeles, Calif.
Owatonna Tool Co., Owatonna, Minn.
Plomb Tool Co., Los Angeles, Calif.
Racine Tool & Machine Co., Racine, Wis.
Simonds Saw and Steel Co., Fitchburg, Mass.
Spartan Saw Works, Inc., Springfield, Mass.
Starrett, L. S., Co., The, Athol, Mass.
Thompson, Henry G., & Son, Co., The, New Haven, Conn.
Victor Saw Works, Inc., Middletown, N. Y.

HANDLES—Adze, Axe, Hammer & Hatchet, Etc.

American Handle Co., Jonesboro, Ark.
Bonny Forge & Tool Works, Allentown, Pa.
Pruner-Ivory Handle Co., Hope, Ark.
Gallup-Ruffing Handle Co., The, Norwalk, Ohio
Herbrand Tools, Fremont, Ohio
Link, O. P., Handle Co., Salem, Ind.
Plomb Tool Co., Los Angeles, Calif.
Plumb, Fayette R., Inc., Philadelphia, Pa.

HANDLES—File, Chisel, Punch, Etc.

American Stamping Co., Battle Creek, Mich.
Atlas Welding Accessories Co., Ferndale, Mich.
Bonney Forge & Tool Works, Allentown, Pa.
Disston Henry, & Sons, Inc., Tacony, Philadelphia, Pa.
Gallup-Ruffing Handle Co., The, Norwalk, Ohio. (Bit brace handles and knobs).
Heller Brothers Co., Newark, N. J.
Link, O. P., Handle Co., Salem, Ind.
Lutz File & Tool Co., Cincinnati, Ohio
Nicholson File Co., Providence, R. I.
Parker-Kalon Corp., New York, N. Y.
Peck, Stow & Wilcox Co., Southington, Conn.
Plomb Tool Co., Los Angeles, Calif.
Quality Tool Corp., New Wilmington, Pa.
Remont Mfg. Co., Lombard, Ill.
Syracuse Alloy Metals Corp., Syracuse, N. Y.
Wolverine Tool Co., Detroit, Mich.

HAND PUNCHES

Blackhawk Mfg. Co., Milwaukee, Wis.
Blum, Julius, & Co., Inc., New York, N. Y
Bonny Forge & Tool Works, Allentown, Pa.
Buffalo Forge Co., Buffalo, N. Y.
C-B Tool Co., Lancaster, Pa.
Cincinnati Tool Co., The, Cincinnati, Ohio
Crescent Tool Co., Jamestown, N. Y.
Herbrand Tools, Fremont, Ohio
Kraeuter & Co., Inc., Newark, N. J.
Lapeer Mfg. Co., Detroit, Mich.
Mayhew Steel Products, Inc., Shelburne Falls, Mass.
National Machine Tool Co., Racine, Wis.
Niagara Machine & Tool Works, Buffalo, N. Y.
O'Neil Irwin Mfg. Co., Lake City, Minn.
Owatonna Tool Co., Owatonna, Minn.
Oxford Tool Corp., Philadelphia, Pa.
Parker-Kalon Corp., New York, N. Y.
Peck, Stow & Wilcox Co., Southington, Conn.
Plomb Tool Co., Los Angeles, Calif.
Quality Tools Corp., New Wilmington, Pa.
Whitney, W. A., Mfg. Co., Rockford, Ill.
Williams, J. H., & Co., Buffalo, N. Y.

HEAT-TREATING METAL SALTS

American Cyanamid Co., New York, N. Y.
Holden, A. E., Co., The, New Haven, Conn.
Standard Research Inc., New Haven, Conn.

HOISTING CRABS

American Hoist & Derrick Co., St. Paul, Minn.
Cleveland Crane & Engineering Co., The Wickliffe, Ohio
Northern Engineering Works, Detroit, Mich.
Round, David & Son, Cleveland, Ohio
Sasgen Derrick Co., Chicago, Ill.
Wright Hoist Div. of Amer. Chain & Cable Co., Inc., York, Pa.

HOLE SAWS

Anderson Corp., Worcester, Mass.
Armstrong-Blum Mfg. Co., Chicago, Ill
Aro Equipment Corp., Bryan, Ohio
Black & Decker Mfg. Co., The, Towson, Md.
Disston, Henry, & Sons, Inc., Tacony, Philadelphia, Pa.
Millers Falls Co., Greenfield, Mass.
Misener Manufacturing Co., Inc., Syracuse, N. Y.
Porter-Cable Machine Co., Syracuse, N. Y.
SKIL Corp., Chicago, Ill.
Stanley Electric Tools, Div. of the Stanley Works, New Britain, Conn
Stow Mfg. Co., Binghamton, N. Y.
U. S. Electrical Tool Co., Cincinnati, Ohio
Van Dorn Electric Tool Co., Towson, Md.

INDUSTRIAL WHEELS

Dico Corp., Des Moines, Iowa
Motor Wheel Co., Lansing, Mich.
Neilson Wheel Co., Milwaukee, Wis.
Osborn Mfg. Co., The, Cleveland, Ohio
Thomas Truck & Caster Co., Keokuk, Iowa
Young, C. W., Mfg. Co., Syracuse, N. Y.

INSTRUMENTS, Training Aids

Automatic Temperature Control Co., Inc., Philadelphia, Pa.
Bristol Co., The, Waterbury, Conn.
Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.
Rapidesign, Inc., Glendale, Calif.
Rubicon Co., Philadelphia, Pa.

LADLES, Metal Melting, Pouring and Skimming

American Car and Foundry Co., New York, N. Y.
Bernz, Otto, Co., Inc., Rochester, N. Y.
Clayton & Lambert Mfg. Co., Louisville, Ky.
Diener, Geo. W., Mfg. Co., Chicago, Ill.
Dixon, Joseph, Crucible Co., Jersey City, N. J.
Eclipse Fuel Engineering Co., Rockford, Ill.
General Detroit Corp., The, Detroit, Mich.
General Scientific Equip. Co., Philadelphia, Pa.
Hollands Mfg. Co., Erie, Pa.
Peck, Stow & Wilcox Co., Southington, Conn. (Metal melting only.)
Phoenix Products Co., Milwaukee, Wis.
Salem Tool Co., The, Salem, Ohio
Syracuse Alloy Metals Corp., Syracuse, N. Y.
Unique Mfg. Co., Inc., Chicago, Ill.
Whiting Corp., Harvey, Ill.

LIGHTS, Portable Acetylene

Air Reduction Sales Co., New York, N. Y.
American Oxygen Service Corp., Harrison, N. J.
Linde Air Products Company, a unit of Union Carbide and Carbon Corp., New York 17, N. Y.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Milburn, Inc., Alexander, Baltimore, Md.
Modern Engineering Co., Inc., St. Louis, Mo.

MACHINISTS' HAMMERS

American Fork & Hoe Co., Cleveland, Ohio
Billings & Spencer Co., The, Hartford, Conn.
Blackhawk Mfg. Co., Milwaukee, Wis.
Bonney Forge & Tool Works, Allentown, Pa.
Capewell Manufacturing Co., The, Hartford, Conn.
Champion deArment Co., Meadville, Pa.
Do-All Co., The, Des Plaines, Ill.
Duro Metal Products Co., Chicago, Ill.
Herbrand Tools, Fremont, Ohio
Ideal Industries, Inc., Sycamore, Ill.
Mayhew Steel Products, Inc., Shelburne Falls, Mass.
New Britain Machine Co., The, New Britain, Conn.
Peck, Stow & Wilcox Co., Southington, Conn.
Plomb Tool Co., Los Angeles, Calif.
Plumb, Fayette R., Inc., Philadelphia, Pa.
Skil Corp., Chicago, Ill.
Williams, J. H. & Co., Buffalo, N. Y.

Grinding wheel recommendations

Material	Abrasive	Grain	Grade	Bond
ALUMINUM				
Surfacing (cups and cylinders)	C	24	J	V
Surfacing (discs)	C	20	K	B
Portable grinders 5,000–6,500 sfpm	C	24	O	V
Portable grinders 7,000–9,500 sfpm	C	30	O	B
Cutting-off (dry) 9,000–16,000 sfpm	A	24	–	B
Cutting-off (wet) 7,500–12,000 sfpm	A	46	–	R
Cutting-off (Tabor foundry machines)	A	24	–	B
BILLETS (alloy and high-speed steels)				
Portable grinders 5,000–6,500 sfpm	A	20	Q	V
Portable grinders 7,000–9,500 sfpm	A	20	Q	B
BRASS				
Surfacing (cups and cylinders)	C	24	H	V
Surfacing (discs)	C	24	M	B
Cutting-off, gates and risers (dry, Tabor machine) 16,000 sfpm	A	24	–	B
Cutting-off, rod (dry) 9,000–16,000 sfpm	A	30	–	B
Cutting-off, rod (wet) 7,500–12,000 sfpm	A	60	–	R
Cutting-off, tubing (dry) 7,500–12,000 sfpm	A	80	–	R
Cutting-off, tubing (wet) 9,000–16,000 sfpm	A	120	–	R
CAST IRON				
Surfacing (cups and cylinders)	C	16	H	V
	A	60	F	V
Surfacing (discs)	C	16	L	B
	C	24	K	V
Surfacing (straight wheels)	C	30	J	V
Snagging (portable grinder) 5,000–6,500 sfpm	C	24	S	V
Snagging (portable grinder) 7,000–9,500 sfpm	C	20	Q	B
CHILLED IRON				
Surfacing (cups and cylinders)	C	24	H	V
Surfacing (straight wheels)	C	36	I	V
COPPER				
Surfacing (cups and cylinders)	C	14	I	V
Surfacing (discs)	C	36	M	B
Cutting-off, rod (dry)	A	60	–	R
Cutting-off, rod (wet)	A	80	–	R
Cutting-off, tubing (dry)	A	80	–	R
Cutting-off, tubing (wet)	A	120	–	R
Gates and risers (dry, Tabor) 16,000 sfpm	A	24	–	B

Material	Abrasive	Grain	Grade	Bond
MALLEABLE CASTINGS (unannealed)				
Surfacing (discs)	A	20	L	B
MALLEABLE CASTINGS (annealed)				
Portable grinders 5,000–6,500 sfpm	A	20	Q	V
Portable grinders 7,000–9,500 sfpm	A	20	Q	B
STEEL CASTINGS (low-carbon)				
Portable grinders 5,000–6,500 sfpm	A	24	Q	V
Portable grinders 7,000–9,500 sfpm	A	20	Q	B
	A	20	T	R
STEEL CASTINGS (manganese)				
Portable grinders 5,000–6,500 sfpm	A	24	Q	V
Portable grinders 7,000–9,500 sfpm	A	20	Q	B
STEEL (hardened)				
Surfacing (cups and cylinders)	A	30	G	V
Surfacing, roughing (discs)	A	16	K	B
Surfacing, finishing (discs)	A	46	J	B
STEEL (soft)				
Surfacing (cups and cylinders)	A	24	J	V
Surfacing, roughing (discs)	A	16	M	B
Surfacing, finishing (discs)	A	46	K	B
STEEL (high-speed)				
Surfacing (cups and cylinders)	A	46	G	V
Surfacing (straight wheels)	A	46	H	V
	A	60	F	V
STEEL (stainless, free-machining)				
Surfacing (cups and cylinders)	A	36	G	V
Surfacing (straight wheels)	A	46	H	V
Billets and slabs (portable grinders 7,000–9,500 sfpm	A	20	Q	B
	A	24	T	R
WELDS				
Carbon-alloy steels				
Portable grinders 5,000–6,500 sfpm	A	24	Q	V
Portable grinders 7,000–9,500 sfpm	A	16	R	B
Stainless steel				
Portable grinders 7,000–9,500 sfpm	A	24	T	R

From The Grinding Wheel by Kenneth B. Lewis, Grinding Wheel Institute, 1951

Safe Grinding Wheel Speeds

It is good practice to operate a grinding wheel as near to the speed recommended by the maker as possible. In general, for cylindrical grinding, wheels should be run from 5,500 to 6,500 surface feet per minute; for surface grinding from 4,000 to 6,000 s.f.p.m.; for cutter grinding from 4,500 to 6,000 s.f.p.m. and for wet tool grinding from 5,000 to 6,000 s.f.p.m. Other speeds are given in Table I.

After you have found the recommended wheel speed at the periphery, as given in Table I, the problem arises of determining the wheel diameter for a given grinder speed (revolutions per minute). The arithmetic has been performed for you in Table II. Find the proper peripheral speed above one of the columns and run down the column until you reach the nearest rpm to your grinder speed. The safe diameter of the grinding wheel can then be found in the columns at extreme left or extreme right.

Example: For snagging a weld with a resinoid wheel, recommended peripheral speed is 7,000 s.f.p.m. With a grinder speed of 4,400 rpm, the wheel diameter should be 6 in. (figures shown in rectangles).

The grain, grade and structure usually recommended for any certain operation are based on the assumption that approximately the recommended speed will be employed. If for some reason this is not possible, then the grade at least should be changed to conform to the different speed. Too slow a speed means wastage of abrasive without too much useful work in return, whereas an excessive speed may result in hard grinding action and may introduce the danger of the wheel breaking through centrifugal force* or burning the work.

*"Centrifugal force" is the force that tends to rupture a given wheel when overspeeding. It increases as the square of the velocity of the wheel. For example, the centrifugal force in a wheel running at 5,500 s.f.p.m. is 49% greater than in the same wheel running 4,500 s.f.p.m., although the speed is actually only 22% greater.

Table I. Recommended Wheel Speeds in Surface Feet per Minute

Tool and cutter grinding	4,500- 6,000
Cylindrical grinding	5,500- 6,500
Internal grinding	2,000- 6,000
Snagging, offhand grinding (vitrified wheels)	5,000- 6,000
Snagging (rubber and resinoid wheels)	7,000- 9,500
Surface grinding	4,000- 6,000
Knife grinding	3,500- 4,500
Hemming cylinders	2,100- 5,500†
Wet tool grinding	5,000- 6,000
Cutting wheels	4,000- 5,000
Cutting-off wheels (rubber, resinoid and shellac)	9,000-16,000†

†This higher speed is recommended only where bearings, protection devices and machine rigidity are adequate.

Table II. Peripheral Speed Converted to Revolutions per Minute and Wheel Diameter

Dia. of Wheel in Inches	Peripheral Speed in Feet per Minute																Dia. of Wheel in Inches
	4,000	4,500	5,000	5,500	6,000	6,500	7,000	7,500	8,000	8,500	9,000	9,500	10,000	12,000	14,000	16,000	
	Revolu	tions pe	r Minut	e	Revolu	tions pe	r Minut	e	Revolu	tions pe	r Minut	e	Revolu	tions pe	r Minut	e	
1	15,279	17,189	19,098	21,008	22,918	24,828	26,737	28,647	30,558	32,467	34,377	36,287	38,196	45,836	53,474	61,116	1
2	7,639	8,594	9,549	10,504	11,459	12,414	13,368	14,328	15,278	16,238	17,188	18,143	19,098	22,918	26,737	30,558	2
3	5,093	5,729	6,366	7,003	7,639	8,276	8,913	9,549	10,186	10,822	11,459	12,115	12,732	15,278	17,826	20,372	3
4	3,820	4,297	4,775	5,252	5,729	6,207	6,685	7,162	7,640	8,116	8,595	9,072	9,549	11,459	13,368	15,278	4
5	3,056	3,438	3,820	4,202	4,584	4,966	5,348	5,730	6,112	6,494	6,876	7,258	7,640	9,168	10,696	12,224	5
6	2,546	2,865	3,183	3,501	3,820	4,138	4,456	4,775	5,092	5,411	5,729	6,048	6,366	7,639	8,913	10,186	6
7	2,183	2,455	2,728	3,001	3,274	3,547	3,820	4,092	4,366	4,538	4,911	5,183	5,456	6,548	7,640	8,732	7
8	1,910	2,148	2,387	2,626	2,865	3,103	3,342	3,580	3,820	4,058	4,297	4,535	4,775	5,729	6,685	7,640	8
10	1,528	1,719	1,910	2,101	2,292	2,483	2,674	2,865	3,056	3,247	3,438	3,629	3,820	4,584	5,348	6,112	10
12	1,273	1,432	1,591	1,751	1,910	2,069	2,228	2,386	2,546	2,705	2,864	3,023	3,183	3,820	4,456	5,092	12
14	1,091	1,228	1,364	1,500	1,637	1,773	1,910	2,046	2,182	2,319	2,455	2,592	2,728	3,274	3,820	4,366	14
16	955	1,074	1,194	1,313	1,432	1,552	1,672	1,791	1,910	2,029	2,149	2,268	2,387	2,865	3,342	3,820	16
18	849	955	1,061	1,167	1,273	1,379	1,485	1,591	1,698	1,803	1,910	2,016	2,122	2,546	2,970	3,396	18
20	764	859	955	1,050	1,146	1,241	1,337	1,432	1,528	1,623	1,719	1,814	1,910	2,292	2,674	3,056	20
22	694	781	868	955	1,042	1,128	1,215	1,302	1,388	1,476	1,562	1,649	1,736	2,084	2,430	2,776	22
24	637	716	796	875	955	1,034	1,115	1,194	1,274	1,353	1,433	1,512	1,591	1,910	2,228	2,546	24
26	588	661	734	808	881	955	1,028	1,101	1,176	1,248	1,322	1,395	1,468	1,762	2,056	2,352	26
28	546	614	682	750	818	887	955	1,023	1,092	1,159	1,228	1,296	1,364	1,637	1,910	2,182	28
30	509	573	637	700	764	828	891	955	1,018	1,082	1,146	1,210	1,274	1,528	1,782	2,036	30
32	477	537	597	656	716	776	836	895	954	1,014	1,074	1,134	1,194	1,432	1,672	1,910	32
34	449	505	562	618	674	730	786	843	898	955	1,011	1,067	1,124	1,348	1,572	1,796	34
36	424	477	530	583	637	690	742	795	848	902	954	1,007	1,061	1,273	1,484	1,698	36
38	402	452	503	553	603	653	704	754	804	854	904	955	1,006	1,206	1,408	1,608	38
40	382	430	478	525	573	620	669	716	764	812	860	908	956	1,146	1,338	1,528	40
42	366	409	454	500	545	591	636	682	732	775	818	863	908	1,090	1,272	1,464	42
44	347	390	434	478	521	564	608	651	694	737	780	824	868	1,042	1,216	1,388	44
46	333	375	416	458	500	541	582	624	666	708	750	791	832	1,000	1,164	1,332	46
48	318	358	398	438	478	517	558	597	636	676	716	756	796	956	1,116	1,272	48
53	288	324	360	395	432	468	503	539	576	612	648	683	720	864	1,006	1,152	53
60	255	287	319	350	387	414	446	478	510	542	574	606	638	774	892	1,020	60
72	212	239	265	291	318	345	371	398	424	451	477	504	530	637	743	849	72

To find the peripheral speed of a wheel in feet per minute (S.F.P.M.), multiply the circumference in feet by the wheel revolutions per minute.

$$\text{S.F.P.M. of wheel} = \frac{\text{Diameter in inches} \times 3.14 \times \text{R.P.M.}}{12}$$

To find the number of revolutions per minute (R.P.M.) of the wheel spindle given the peripheral speed (S.F.P.M.) and the diameter of the wheel, multiply the peripheral speed in feet per minute by 12, and divide the product by 3.14 times the diameter of wheel in inches.

$$\text{R.P.M. of wheel spindle} = \frac{\text{S.F.P.M.} \times 12}{3.14 \times \text{diameter in inches}}$$

Courtesy Norton Company

MALLETS, Rubber and Composition Head

Atlas Welding Accessories Co., Ferndale, Mich.
Chicago Rawhide Mfg. Co., Chicago, Ill.
Goodrich, B. F., Co., The, Akron, Ohio
Goodyear Tire & Rubber Co., Inc., The, Akron, Ohio
Homer Rubber Co., Trenton, N. J.
Link, O. P., Handle Co., Salem, Ind.
Quaker Rubber Corp., Philadelphia, Pa.
Quality Tools Corp., New Wilmington, Pa.
Republic Rubber Division, Lee Rubber & Tire Corp., Youngstown, Ohio
United States Rubber Co., New York, N. Y.

MEASURING TAPES

Dietzgen, Eugene Co., Chicago, Ill.
Keuffel & Esser Co., Hoboken, N. J.
Lufkin Rule Co., The, Saginaw, Mich.
Master Rule Mfg. Co., Inc., New York, N. Y.
Omicron Co., The, Glendale, Calif.
Starrett, L. S., Co., The, Athol, Mass.

METAL CLEANERS

American Welding Alloys Corp., Brooklyn, N. Y.
Atlas Welding Accessories Co., Ferndale, Mich.
Best Effect Chemical Co., Inc., Hackensack, N. J.
Carbide & Carbon Chemicals Corp., Unit of Union Carbide & Carbon Corp., New York, N. Y.
Colonial Alloys Co., Philadelphia, Pa.
Diversey Corp., The, Metal Industries Dept., Chicago, Ill.
E. I. DuPont de Nemours & Co., Inc., Wilmington, Del.
Eclipse Fuel Engineering Co., Rockford, Ill.
Gumm, Fred., Chem. Co., Inc., Kearney, N. J.
Haas Miller Corp., Philadelphia, Pa.
Hollingshead, R. M., Corp., Camden, N. J.
Houghton, E. F., & Co., Philadelphia, Pa.
Kelite Products, Inc., Los Angeles, Calif.
Klem Chemicals, Inc., Dearborn, Mich.
MacDermid, Inc., Waterbury, Conn.
NuSteel Co., Chicago, Ill.
Oakite Products, Inc., New York, N. Y.
Optimus Equipment Co., The, Matawan, N. J.
Pacific Hardware & Steel Co., Inc., San Jose, Calif.
Pennsylvania Salt Mfg. Co., Philadelphia, Pa.
Philadelphia Quartz Co., Philadelphia, Pa.
Phillips Mfg. Co., Chicago, Ill.
Quaker Chemical Prod. Corp., Conshohocken, Pa.
Solventol Chemical Products, Inc., Detroit, Mich.
Standard Research, Inc., New Haven 13, Conn.
Standard Supply Co., New Haven, Conn.
Thermacote Co., Los Angeles, Calif.
Turco Products, Inc., Los Angeles, Calif.
Waverly Petroleum Products Co., Philadelphia, Pa.
Wolfe-Kote Co., Sheboygan, Wis.
Wyandotte Chemicals Corp., Wyandotte, Mich.

METAL-CUTTING BAND SAW BLADES

Armstrong-Blum Mfg. Co., Chicago, Ill.
Atkins, E. C. & Co., Indianapolis, Ind.
Capewell Mfg. Co., The, Hartford, Conn.
Clemson Bros., Inc., Middletown, N. Y.
Delta Power Tool Div., Rockwell Mfg. Co., Milwaukee, Wis.
Disston, Henry & Sons, Inc., Tacony, Philadelphia, Pa.
DoAll Co., The, Des Plaines, Ill.
Famco Machine Co., Racine, Wis.
Foley Mfg. Co., Minneapolis, Minn.
Griffin, G. W., Co., Franklin, N. H.
Millers Falls Co., Greenfield, Mass.
Simonds Saw & Steel Co., Fitchburg, Mass.
SKIL Corp., Chicago, Ill.
Sperton Saw Works, Inc., Springfield, Mass.
Starrett Co., The, L. S. Athol, Mass.
Thompson, Henry G. & Son Co., The, New Haven, Conn.
Wells Mfg. Corp., Three Rivers, Mich.

METAL-CUTTING CIRCULAR SAWS

Atkins, E. C., and Co., Indianapolis, Ind.
Black & Decker Mfg. Co., The, Towson, Md.
Blackford Mfg. Co., Inc., Hartford, Ind.
Brown & Sharpe Mfg. Co., Providence, R. I.
Campbell Machine Division, Am. Chain & Cable Co., Inc., Bridgeport, Conn.
Curtis Pneumatic Machinery, Div. of Curtis Mfg. Co., St. Louis, Mo.
Delta Power Tool Co., Rockwell Mfg. Co., Milwaukee, Wis.
DeWalt, Inc., Lancaster, Pa.
Disston Henry, & Sons, Inc., Tacony, Philadelphia, Pa.
DoAll Co., The, Des Plaines, Ill.
Foley Mfg. Co., Minneapolis, Minn.
Gorham Tool Co., Detroit, Mich.
Kett Tool Co., Cincinnati, Ohio
Midwest Tool & Mfg. Co., Detroit, Mich.
Morse Twist Drill & Machine Co., New Bedford, Mass.
National Twist Drill & Tool Co., Rochester, Mich.
Ohlen-Bishop Mfg. Co., Columbus, Ohio
Portable Electric Tools, Inc., Chicago, Ill.
Porter-Cable Machine Co., Syracuse, N. Y.
Reltool Corp., Milwaukee, Wis.
Simonds Saw and Steel Co., Fitchburg, Mass.
SKIL Corp., Chicago, Ill.
Starrett Co., The, L. S., Athol, Mass.

METAL-CUTTING MACHINES

American Pullmax Co., Inc., Chicago, Ill.
Baker Bros., Inc., Toledo, Ohio
Barth Mfg. Co., The, Milldale, Conn.
Black & Decker Mfg. Co., The, Towson, Md.
Brown & Sharpe Mfg. Co., Providence, R. I.
Buckeye Tools Corp., Dayton, Ohio
C-B Tool Co., Lancaster, Pa.
Campbell Machine Div., American Chain & Cable Co., West Bridgeport, Conn.
Clark, Robert H., Co., Los Angeles, Calif.
Famco Machine Co., Racine, Wis.
Kling Bros. Engineering Works, Chicago, Ill.
National Machine Tool Co., Racine, Wis.
Niagara Machine & Tool Works, Buffalo, N. Y.
O'Neil-Irwin Mfg. Co., Lake City, Minn.
Parker Manufacturing Co., Santa Monica, Calif.
Shobar Sales, Inc., Stockton, Calif.
Thomas Machine Mfg. Co., Pittsburgh, Pa.
Wales-Strippit Corp., N. Tonawanda, N. Y.
Webb Corp., The, Webb City, Mo.
Whiting Corp., Harvey, Ill.
Whitney, W. A., Mfg. Co., Rockford, Ill.

METAL-CUTTING SHEARS, Electric, Portable

Barth Mfg. Co., The, Milldale, Conn.
Black & Decker Mfg. Co., The, Towson, Md.
Independent Pneumatic Tool Co., Chicago, Ill.
Jefferson Engineering & Mfg. Co., Detroit, Mich.
SKIL Corp., Chicago, Ill.
Stanley Electric Tool Division, The Stanley Works, New Britain, Conn.
Van Dorn Electric Tool Co., The, Towson, Md.

NIBBLING MACHINES

American Pullmax Co., Inc., Chicago, Ill.
Buckeye Tools Corp., Dayton, Ohio
Campbell, Andrew C., Division of American Chair & Cable Co., Inc., Bridgeport, Conn.
Wales-Strippit Corp., N. Tonawanda, N. Y.

NOTCHING UNIT, Pipe and Tubing

Blum, Julius, & Co., Inc., New York, N. Y.
Douglas Pipe Mach. Co., Monrovia, Calif.
H & M Pipe Beveling Machine Co., Tulsa, Okla.
Heath Engineering Co., Ft. Collins, Colo.
Vogel Tool & Die Corp., Chicago, Ill.

OVERHEAD TRAVELING CRANES

Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
Cleveland Crane & Engineering Co., The, Wickliffe, Ohio
Columbus-McKinnon Chain Corp., Tonawanda, N. Y.
Conco Engr. Works, Mendota, Ill.
Detroit Hoist & Mach. Co., Detroit, Mich.
Downs Crane & Hoist Co., Los Angeles, Calif.
Ford Chain Block Div. of Amer. Chain & Cable Co., Inc., York, Pa.
Grand Specialties Co., Chicago, Ill.
Harnischfeger Corp., Milwaukee, Wis.
Industrial Equip. Co., Chicago, Ill.
Manning, Maxwell & Moore, Inc., Shaw-Box Crane & Hoist Div., Muskegon, Mich.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Northern Engineering Works, Detroit, Mich.
Peck, Cecil C., Co., Cleveland, Ohio
Robbins & Myers, Inc., Springfield, Ohio
Round, David & Son, Cleveland, Ohio
Stryco Mfg. Co., San Francisco, Calif.
Whiting Corp., Harvey, Ill.
Wright Hoist Div., American Chain & Cable Co., Inc., York, Pa.

OXIDE REMOVING COMPOUNDS

(See: "Metal Cleaners")

PAINT-SPRAY NOZZLES

Allen, W. D., Mfg. Co., Chicago, Ill.
DeVilbiss Co., The, Toledo, Ohio
Elkhart Brass Mfg. Co., Elkhart, Ind.
Paasche Airbrush Co., Chicago, Ill.
Schrader's, A., Son, Division of Scovill Manufacturing Co., Inc, Brooklyn, N. Y.
Sherman, H. B., Mfg. Co., Battle Creek, Mich.

PIPE-BENDING MACHINES

Baldwin Locomotive Works, The, Philadelphia, Pa.
Blackhawk Mfg. Co., Milwaukee, Wis.
Chase Brass & Copper Co., Inc., Waterbury, Conn.
Greenlee Tool Co., The, Rockford, Ill.
Hossfeld Mfg. Co., Winona, Minn.
O'Neil-Irwin Mfg. Co., Lake City, Minn
Pandjiris Weldment Co., St. Louis, Mo.
Parker Appliance Co., The, Cleveland, Ohio
Pedrick Tool & Machine Co., Philadelphia, Pa.
Silent Hoist & Crane Co., Inc., Brooklyn, N. Y.
Skinner, M. B., Co., South Bend, Ind.
Studebaker Machine Co., Maywood, Ill.
Tal Bender, Inc., Milwaukee, Wis.
Thomas Machine Mfg. Co., Pittsburgh, Pa.
Wallace Supplies Mfg. Co., Chicago, Ill.
Watson-Stillman Co., The, Roselle, N. J.

PIPE CUTTERS

American Pipe Tool Co., Chicago, Ill.
Armstrong Bros. Tool Co., Chicago, Ill.
Atkins, E. C., & Co., Indianapolis, Ind.
Beaver Pipe Tools, Inc., Warren, Ohio
Capewell Mfg. Co., The, Hartford, Conn.
Collmer Bros., South Bend, Ind.
Disston, Henry, & Sons, Inc., Tacony, Philadelphia Pa.
Heath Engrg. Co., Ft. Collins, Colo.
Herbrand Tools, Fremont, Ohio
Hollands Mfg. Co., Erie, Pa.
Imperial Brass Mfg. Co., The, Chicago, Ill.
Nye Tool & Machine Co., Chicago, Ill.
Oster Manufacturing Co., The, Cleveland, Ohio
Parker Appliance Co., Inc., The, Cleveland, Ohio
Quijada Tool Co., Inc., Los Angeles, Calif.
Ridge Tool Co., The, Elyria, Ohio
Sandvik Saw & Tool (Division of Sandvik Steel Inc.), New York, N. Y.
Toledo Pipe Threading Machine Co., The, Toledo, Ohio
Triment Mfg. Co., Div. of Aetna Industrial Corp., Roxbury, Mass.
Vogel Tool & Die Corp., Melrose Park, Ill.

PIPE JAWS, for Vises

Capewell Mfg. Co., The, Hartford, Conn.
Chicago Tool & Engineering Co., Chicago, Ill.
Columbian Vise & Mfg. Co., The, Cleveland, Ohio.
Desmond-Stephan Mfg. Co., Urbana, Ohio
Grand Specialties Co., Chicago, Ill.
Hollands Mfg. Co., Erie, Pa.
Progressive Welder Co., Detroit, Mich.
Ridge Tool Co., The, Elyria, Ohio
Wilton Tool Mfg. Co., Chicago, Ill.

PLIERS

American Optical Co., Southbridge, Mass.
Atlas Welding Accessories Co., Ferndale, Mich.
Basford, H. R., Co., San Francisco, Calif.
Billings & Spencer Co., The, Hartford, Conn.
Blackhawk Mfg. Co., Milwaukee, Wis.
Bonny Forge & Tool Works, Allentown, Pa.
Bridgeport Hardware Mfg. Co., The, Bridgeport, Conn.
Champion DeArment Tool Co., Meadville, Pa.
Crescent Tool Co., Jamestown, N. Y.
Duro-Metal Products Co., Chicago, Ill.
Herbrand Tools, Fremont, Ohio
Klein, Mathias, & Sons, Chicago, Il.
Kraeuter & Co., Inc., Newark, N. J.
Lapeer Mfg. Co., Lapeer, Mich.
New Britain Machine Co., New Britain, Conn.
Owatonna Tool Co., Owatonna, Minn.
Park Metalware Co., Inc., Orchard Park, N. Y.
Peck, Stow & Wilcox Co., Southington, Conn.
Plomb Tool Co., Los Angeles, Calif.
Quality Tools Corp., New Wilmington, Pa.
Smith, Seymour & Son, Inc, Oakville, Conn.
Stevens Walden, Inc., Worcester, Mass.
Utica Drop Forge & Tool Corp., Utica, N. Y.
Vichek Tool Co., The, Cleveland, Ohio

PORTABLE AIR COMPRESSORS

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
Brunner Manufacturing Co., Utica, N. Y.
Champion Pneumatic Machinery Co., Chicago, Ill.
Chicago Pneumatic Tool Co., New York, N. Y.
DeVilbiss Co., The, Toledo, Ohio
Gardner-Denver Co., Quincy, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
Joy Mfg. Co., Pittsburgh, Pa.
Kellogg Division of The American Brake Shoe Co., Rochester, N. Y.
Paasche Airbrush Co., Chicago, Ill.
Roots-Connersville Blower Corp., Connersville, Ind.
Saylor-Beall Manufacturing Co., Lansing, Mich.
Schramm, Inc., West Chester, Pa.
Smith, Gordon, & Co., Inc., Bowling Green, Ky.
Worthington Corp., Dunellen, N. J.

PLIERS, Toggle-Action

Atlas Welding Accessories Co., Ferndale, Mich.
Detroit Stamping Co., Detroit, Mich.
Lapeer Mfg. Co., Lapeer, Mich.
Owatonna Tool Co., Owatonna, Minn.
Petersen Mfg. Co., Inc., DeWitt Nebraska
Plomb Tool Co., Los Angeles, Calif.
Seymour Smith & Son, Inc., Oakville, Conn.

PLUGS and RECEPTACLES

Albert & J. M. Anderson Mfg. Co., Boston, Mass.
Appleton Electric Co., Chicago, Ill.
Clinch Mfg. Corp., Chicago, Ill.
Cutler-Hammer, Inc., Milwaukee, Wis.
Industrial Products Co., Philadelphia, Pa.
Jones, Howard B., Div. Cinch Mfg. Corp., Chicago, Ill.
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Pyle-National Co., Chicago, Ill.
Stevens, C. H. & Co., Cornwall Bridge, Conn.
Westinghouse Electric Corp., Pittsburgh, Pa.

PNEUMATIC HOISTS

Anker Holth Division of Wellman Engineering Co., Port Huron, Mich.
Chicago Pneumatic Tool Co., New York, N. Y.
Cleveland Crane & Engineering Co., Wickcliffe, Ohio
Curtis Pneumatic Machinery, Div. of Curtis Mfg. Co., St. Louis, Mo.
Detroit Hoist & Machine Co., Detroit, Mich.
Ingersoll-Rand Co., New York, N. Y.
Keller Tool Co., Grand Haven, Mich.
Market Forge Co., Everett, Mass.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Northern Engineering Works, Detroit, Mich.
Platz Co., Inc., Detroit, Mich.
Thor Power Tool Co., Aurora, Ill.

POLISHERS

Acme Mfg. Co., Detroit, Mich.
Aro Equipment Corp., Bryan, Ohio
Aronson Machine Co., Arcade, N. Y.
Black & Decker Mfg. Co., The, Towson, Md.
Bushler, Ltd., Chicago, Ill.
Chicago Pneumatic Tool Co., New York, N. Y.
Clizbe Bros. Mfg. Co., Plymouth, Ind.
Cummins-Chicago Corp., Chicago, Ill.
Cutter Machine Co. (Belt Driven), St. Louis, Mo.
Divine Brothers Co., Utica, N. Y.
Elliott Mfg. Co., Binghamton, N. Y.
Hisey Wolf Machine Co., The, Cincinnati, Ohio
Mall Tool Co., Chicago, Ill.
Merit Products, Inc., Culver City, Calif.
Miller Falls Co., Greenfield, Mass.
NuSteel Co., Chicago, Ill.
Overly, Chas. F., Co., Cleveland, Ohio
Pacific Hardware & Steel Co., Inc., San Jose, Calif.
Portable Electric Tools, Inc., Chicago, Ill.
Porter-Cable Machine Co., Syracuse, N. Y.
Rotor Tool Co., Cleveland, Ohio
Ryman Engineering Co., Ellwood City, Pa.
SKIL Corp., Chicago, Ill.
Stow Manufacturing Co., Binghamton, N. Y.
Syntron Co., Homer City, Pa.
Thor Power Tool Co., Aurora, Ill.
United States Electric Tool Co., The, Cincinnati, Ohio

PORTABLE CRANES

Chisholm Moore Hoist Corp., Tonawanda, N. Y.
Conco Engineering Works, Mendota, Ill.
Downs Crane & Hoist Co., Los Angeles, Calif.
Ford Chain Block Div. of American Chain & Cable Co., Inc., York, Pa.
Harnischfeger Corp., Milwaukee, Wis.
Revolvator Co., North Bergen, N. J.
Round, David, & Son, Cleveland, Ohio
Shepard Niles Crane & Hoist Co., Montour Falls, N. Y.
Wright Hoist Div. of American Chain & Cable Co., Inc., York, Pa.
Yale & Towne Mfg. Co., The, Phila. Div., Philadelphia, Pa.

PORTABLE ELECTRIC SANDERS

Albertson & Co., Inc., Sioux City, Iowa
Black & Decker Mfg. Co., The, Towson, Md.
Bradford Machine Tool Co., Cincinnati, Ohio
Buckeye Tools Corp., Dayton, Ohio
Chicago Pneumatic Tool Co., New York, N. Y.
Cincinnati Electrical Tool Co., The, Cincinnati, Ohio
Clark, James, Jr., Electric Co., Louisville, Ky.
Delta Mfg., Division of The Rockwell Mfg. Co., Milwaukee, Wis.
Duro Metal Products Co., Chicago, Ill.
Hoffman, R. W. Co., Inc., Chicago, Ill.
Mall Tool Co., Chicago, Ill.
Millers Falls Co., Greenfield, Mass.
Milwaukee Electric Tool Corp., Milwaukee, Wis.
Portable Electric Tools, Inc., Chicago, Ill.
Porter-Cable Machine Co., Syracuse, N. Y.
Rotor Tool Co., Cleveland, Ohio
SKIL Corp., Chicago, Ill.
Stanley Electric Tool Division, The Stanley Works, New Britain, Conn.
Sterling Tool Products Co., Chicago, Ill.
Stow Mfg. Co., Inc., Binghamton, N. Y.
Strand, N. A., & Co., Chicago, Ill.
Thor Power Tool Co., Aurora, Ill.
United States Electrical Tool Co., The, Cincinnati, Ohio
Van Dorn Electric Tool Co., The, Towson, Md.
Walker-Turner Co., Inc., Plainfield, N. J.
Wodack Electric Tool Corp., Chicago, Ill

PORTABLE PNEUMATIC SANDERS

Aro Equipment Corp., The, Bryan, Ohio
Buckeye Tools Corp., Dayton, Ohio
Chicago Pneumatic Tool Co., New York, N. Y.
Cleco Div., Reed Roller Bit Co., Houston, Texas
Detroit Surfacing Machine Co., Detroit, Mich.
Hoffman, R. W., Co., Inc., Chicago, Ill.
Keller Tool Co., Grand Haven, Mich.
Mall Tool Co., Chicago, Ill.
Master Pneumatic Tool Co., Inc., Orwell, Ohio
Paasche Airbrush Co., Chicago, Ill.
Rotor Tool Co., The, Cleveland, Ohio
Sterling Tool Products Co., Chicago, Ill.

POTS and KETTLES, Metal Melting

(See: "Ladles, Metal Melting, Pouring and Skimming")

POWER HACK SAWS

American Saw & Mfg. Co., Springfield, Mass.
Armstrong-Blum Mfg. Co., Chicago, Ill.
Atkins, E. C, and Co., Indianapolis, Ind.
Atlas Welding Accessories Co., Ferndale, Mich.
Barnes, W. O., Co., Inc., Detroit, Mich.
Capewell Mfg. Co., The, Hartford, Conn.
Clemson Bros., Middletown, N. Y.
Diamond Saw Works, Inc., Buffalo, N. Y.
Disston Henry, & Sons, Inc., Tacony, Philadelphia, Pa.
DoAll Co., The, Des Plaines, Ill.
Forsberg Mfg. Co., The, Bridgeport, Conn.
Griffin, G. W., Co., Franklin, N. H.
Millers Falls Co., Greenfield, Mass.
Simonds Saw and Steel Co. Fitchburg, Mass.
SKIL Corp., Chicago, Ill.
Spartan Saw Works, Inc., Springfield, Mass.
Starrett, L. S., Co., The, Athol, Mass.
Thompson, Henry G., & Son, Co., The, New Haven, Conn.
Victor Saw Works, Inc., Middletown, N. Y.

PULLERS

Blackhawk Manufacturing Co., Milwaukee, Wis.
Columbus-McKinnon Chain Corp., Tonawanda, N. Y.
Herbrand Tools, Fremont, Ohio
Imperial Brass Mfg. Co., The, Chicago, Ill.
National Welding Equip. Co., San Francisco, Calif.
Owatonna Tool Co., Owatonna, Minn.
Plomb Tool Co., Los Angeles, Calif.
Templeton, Kenly & Co., Broadview, Ill.
Utica Drop Forge & Tool Corp., Utica, N. Y.
Williams, J. H., & Co., Buffalo, N. Y.

PUNCH and SHEARS, Combined

Blum, Julius, & Co., Inc., New York, N. Y.
Kling Bros. Engineering Works, Chicago, Ill.
National Machine Tool Co., Racine, Wis.
Niagara Machine & Tool Works, Buffalo, N. Y.
Peck, Stow & Wilcox Co., Southington, Conn.
Webb Corp., The, Webb City, Mo.

RATCHET LEVER HOISTS

Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
Coffing Hoist Co., Danville, Ill.
Columbus-McKinnon Chain Corp., Tonawanda, N. Y.
Harrington Co., The, Philadelphia, Pa.
Manning, Maxwell & Moore, Inc., Shaw-Box Crane & Hoist Division, Muskegon, Mich.
Morris, Wheeler & Co., Inc., Philadelphia, Pa.
Sasgen Derrick Co., Chicago, Ill.
Stryco Mfg. Co., San Francisco, Calif.
Yale & Towne Mfg. Co., The (Philadelphia Division), Philadelphia, Pa.

REFRACTORIES

Armstrong Cork Co., Building Materials Div., Lancaster, Pa.
Bay State Abrasive Products Co., Westboro, Mass.
Carborundum Co., The, Niagara Falls, N. Y.
Carey, Philip, Mfg. Co., The, Cincinnati, Ohio
Cleveland Quarries Co., Cleveland, Ohio
Dixon, Joseph, Crucible Co., Jersey City, N. J.
Ehret Magnesia Mfg. Co., Valley Forge, Pa.
Hercules Chemical Co., Inc., New York, N. Y.
Johns-Manville, New York, N. Y.
Keasbey & Mattison Co., Ambler, Pa.
Laclede-Christy Co., St. Louis, Mo.
Missillon Refractories Co., The, Massillon, Ohio
Mexico Refractories Co., Mexico, Mo.
National Carbon Div., Union Carbide & Carbon Corp., New York, N. Y.
National Lead Co., New York, N. Y.
North American Refractories Co., Cleveland, Ohio
Norton Co., Worcester, Mass.
Quigley Co., Inc., New York, N. Y.
Titanium Alloy Mfg. Co., Div. National Lead Co., New York, N. Y.

RUBBER ABRASIVES

Carborundum Co., The Niagara Falls, N. Y.
Chicago Wheel & Mfg. Co., Chicago, Ill.
Cratex Manufacturing Co., San Francisco, Calif.
Desanno, A. P. & Son, Inc., Phoenixville, Pa.
Ideal Industries, Inc., Sycamore, Ill.
Raybestos-Manhattan, Inc., Passaic, N. J.
Sandusky Abrasive Wheel Co., Kalamazoo, Mich.
Strand, N. A., Div., The Balmar Corp., Chicago, Ill.
Weldon Roberts Rubber Co., Brightboy Industrial Div., Newark, N. J.

RUBBING and SHARPENING STONES

Carborundum Co., The, Niagara Falls, N. Y.
Chicago Wheel & Mfg. Co., Chicago, Ill.
Cortland Grinding Wheels Corp., Chester, Mass.
Macklin Co., Jackson, Mich.
Mid-West Abrasive Co., Owosso, Mich.
Norton Co., Worcester, Mass.
Sandusky Abrasive Wheel Co., Kalamazoo, Mich.
Universal Wheel & Abrasive Corp., Chicago, Ill.

RUST PREVENTIVES and REMOVERS

Allen, L. B., Co., Inc., Chicago, Ill.
Allied Products Co., Chicago, Ill.
All-State Welding Alloys Co., Inc., White Plains, N. Y.
American Wheelabrator & Equipment Corp., Mishawaka, Ind.
Cabot, Samuel, Inc., Boston, Mass.
Carbide and Carbon Chemicals Div., Union Carbide and Carbon Corp., New York, N. Y.
Cook's, Adam, Sons, Inc., Linden, N. J.
Delta Power Tool Div., Rockwell Mfg. Co., Milwaukee, Wis.
Dennis Chemical Co., St. Louis, Mo.
Diversey Corp., The, Chicago, Ill.
Dolph, John C., Co., Newark, N. J.
Eagle-Picher Sales Co., The, Cincinnati, Ohio
Eutectic Welding Alloys Corp., Flushing, N. Y.
Haas-Miller Corp., Philadelphia, Pa.
Hercules Chemical Co., Inc., New York, N. Y.
Hollingshead, R. M., Corp., Camden, N. J.
Houghton, E. F., & Co., Philadelphia, Pa.
Kano Laboratories, Chicago, Ill.
Kelite Products, Inc., Los Angeles, Calif.
Klem Chemicals, Inc., Dearborn, Mich.
Metalloy Prod. Co., Los Angeles, Calif.
Nox-Rust Chemical Corp., Chicago, Ill.
Oakite Products, Inc., New York, N. Y.
Pacific Hardware & Tools Co., Inc., San Jose, Calif.
Philadelphia Quartz Co., Philadelphia, Pa.
Presstite Engineering Co., St. Louis, Mo.
Quaker Chemical Products Corp., Conshohocken, Pa.
Quigley Co., Inc., New York, N. Y.
Rust-Oleum Corp., Evanston, Ill.
Rusticide Products Co., Cleveland, Ohio
Smith, G. W., & Sons, Inc., Dayton, Ohio
Sonneborn Sons Inc., L., New York, N. Y.
Standard Research Inc., New Haven, Conn.
Stuart, D. A., Oil Co., Ltd., Chicago, Ill.
Sun Oil Co., Philadelphia, Pa.
Superior Flake Graphite Co., Chicago, Ill.
Thompson & Co., Oakmont, Pa.
Turco Products, Inc., Los Angeles, Calif.
Wailes-Dove Hermiston Corp., Westfield, N. J.
Waverly Petroleum Products Co., Philadelphia, Pa.
Wayne Chemical Products Co., Detroit, Mich.
Wilbur & Williams Co., The, Boston, Mass.
Wolfe-Kote Co., Inc., Sheboygan, Wis.
Wyandotte Chemicals Corp., Wyandotte, Mich.

SANDBLAST ABRASIVES

Bay State Abrasive Products Co., Westboro, Mass.
Carborundum Co., The, Niagara Falls, N. Y.
Clayton-Sherman Abrasive Co., Detroit, Mich.
Macklin Co., Jackson, Mich.
Metallizing Co. of America, Inc., Chicago, Ill.
Metallizing Engineering Co., Long Island City, N. Y.
Norton Co., Worcester, Mass.
Paasche Airbrush Co., Chicago, Ill.
Pangborn Corp., Hagerstown, Md.
Parsons Engineering Corp., Cleveland, Ohio
Turco Products, Inc., Los Angeles, Calif.
Vacu-Blast Co., Inc., Belmont, Cal.

SANDBLAST EQUIPMENT

(See: "Sandblast Machines")

SANDBLAST HOSE

Boston Woven Hose & Rubber Co., Boston, Mass.
Chicago Metal Hose Corp., Maywood, Ill.
Diamond Mechanical Goods Division of The B. F. Goodrich Co., Akron, Ohio
Gates Rubber Co., The, Denver, Colo.
Goodall Rubber Co., Philadelphia, Pa.
Goodrich, B. F. Co., The, Akron, Ohio
Goodyear Tire & Rubber Co., Inc., Akron, Ohio
Hewitt Rubber Div., Hewitt-Robins, Inc., Buffalo, N. Y.
Home Rubber Co., Trenton, N. J.
MacLeod Co., The, Cincinnati, Ohio
New York Belting & Packing Co., Passaic, N. J.
Paasche Airbrush Corp., Philadelphia, Pa.
Pangborn Corp., Hagerstown, Md.
Quaker Rubber Corp., Philadelphia, Pa.
Raybestos-Manhattan, Inc., Passaic, N. J.
Republic Rubber Division, Lee Rubber and Tire Corp., Youngstown, Ohio
Thermoid Rubber, Division of Thermoid Co., Trenton, N. J.

SANDBLAST MACHINES

American Wheelabrator & Equipment Corp., Mishawaka, Ind.
MacLeod Co., The, Cincinnati, Ohio
Pangborn Corp., Hagerstown, Md.
Ruemelin Mfg. Co., Milwaukee, Wis.
Vacu-Blast Co., Inc., Belmont, Cal.

SAND BLAST NOZZLES

American Wheelabrator & Equipment Corp., Mishawaka, Ind.
Carboloy Dept. General Electric Co., Detroit, Mich.
MacLeod Co., The, Cincinnati, Ohio
Norton Co., Worcester, Mass.
Paasche Airbrush Co., Chicago, Ill.
Pangborn Corp., Hagerstown, Md.
Purnell Alloy Co., Angleton, Texas.
Quaker Rubber Corp., Philadelphia, Pa.
Stoody Co., Whittier, Calif.
Victor Equipment Co., San Francisco, Calif.

SANDPAPER

Abrasive Products, Inc., South Braintree, Mass.
Armour & Co., Coated Abrasives Div., Chicago, Ill.
Atlas Abrasives Corp., Brooklyn, N. Y.
Behr-Manning Corp., Troy, N. Y.
Carborundum Co., The, Niagara Falls, N. Y.
Hoffman, R. W., Co., Inc., Chicago, Ill.
Michigan Abrasive Co., Detroit, Mich.
Mid-West Abrasive Co., Owosso, Mich.
Millers Falls Co., Greenfield, Mass.
Minnesota Mining & Mfg. Co., St. Paul, Minn.
SKIL Corp., Chicago, Ill.

SHEARS, Metal Cutting, Foot Power, Belts or Motor Drives

(See: "Metal-Cutting Machines")

SHEARS, Metal Cutting, Pneumatic, Portable

(See: "Metal-Cutting Machines")

Aircraft-Marine Products, Inc, Harrisburg, Pa.
Buckeye Tools Corp., Dayton, Ohio
Cleveland Crane & Engineering Co., Wickliffe, Ohio
Niagara Machine & Tool Works, Buffalo, N. Y.
O'Neil-Irwin Mfg. Co., Lake City, Minn.
Porter, H. K., Inc., Somerville, Mass.

SHEARS, Metal Cutting, Rotary

(See: "Metal-Cutting Machines")

SLEDGES, Mauls or Striking Hammers

(See: "Blacksmiths Hammers")

SPRAY GUNS

Alamite Div., Stewart-Warner Corp., Chicago, Ill.
American Agile Corp., Bedford, Ohio
Binks Manufacturing Co., Chicago, Ill.
Black Mfg. Co., The, Baltimore, Md.
DeVilbiss Co., The, Toledo, Ohio
Hercules Chemical Co., Inc., New York, N. Y.
Kellogg Div. of The American Brake Shoe Co., Rochester, N. Y.
Paasche Airbrush Co., Chicago, Ill.
Powder Weld Process Co., The, Brooklyn, N. Y.
Thompson & Co., Oakmont, Pa.

STEAM HOSE

Atlantic Metal Hose Co., Inc., New York, N. Y.
Boston Woven Hose & Rubber Co., Boston, Mass.
Diamond Mechanical Goods Division of The B. F. Goodrich Co., Akron, Ohio
Electric Hose & Rubber Co., Wilmington, Del.
Feuver, J. H., Co., Inc., Detroit, Mich.
Gates Rubber Co., The, Denver, Colo.
Goodall Rubber Co., Philadelphia, Pa.
Goodrich, B. F., Co., The, Akron, Ohio
Goodyear Tire & Rubber Co., Inc., Akron, Ohio
Hewitt Rubber Div., Hewitt-Robins, Inc., Buffalo, N. Y.
Home Rubber Co., Trenton, N. J.
Ingersoll-Rand Co., New York, N. Y.
Mulconroy Co., Philadelphia, Pa.
New York Belting & Packing Co., Passaic, N. J.
Quaker Rubber Corp., Philadelphia, Pa.
Raybestos-Manhattan, Inc., Passaic, N. J.
Republic Rubber Division, Lee Rubber and Tire Corp., Youngstown, Ohio
Thermoid Rubber, Division of Thermoid Co., Trenton, N. J.

STEEL STOOLS and CHAIRS

Angle Steel Stool Co., Plainwell, Mich.
New Britain Machine Co., The, New Britain, Conn.
Standard Pressed Steel Co., Jenkintown, Pa.

STOCKS and DIES, Bolt

Armstrong Bros. Tool Co., Chicago, Ill.
Bay State Tap & Die Co., Mansfield, Mass.
Beaver Pipe Tools, Inc., Warren, Ohio
Butterfield Division, Union Twist Drill Co., Derby Line, Vt.
Capewell Mfg. Co., The, Hartford, Conn.
Greenfield Tap & Die Corp., Greenfield, Mass.
Hollands Mfg. Co., Erie, Pa.
Morse Twist Drill & Machine Co., New Bedford, Mass.
Nye Tool & Machine Co., Chicago, Ill.
Oster Manufacturing Co., The, Cleveland, Ohio
Pratt & Whitney Div., Niles-Bement-Pond Co., W. Hartford, Conn.
Reed Manufacturing Co., Erie, Pa.
Ridge Tool Co., The, Elyria, Ohio
Standard Tool Co., Cleveland, Ohio
Threadwell Tap & Die Co., Greenfield, Mass.
Toledo Pipe Threading Machine Co., The, Toledo, Ohio

SWITCHES, Electric

Albert & J. M. Anderson Mfg. Co., Boston, Mass.
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Arrow-Hart & Hegeman Co., Hartford, Conn.
Automatic Temperature Control Co., Philadelphia, Pa.
Clark, C. P. & Co., Chicago, Ill.
Clark Controller Co., The, Cleveland, Ohio
Cutler-Hammer Mfg. Co., Milwaukee, Wis.
Frez Instrument Division, Bendix Aviation Corp., Baltimore, Md.
General Electric Co., Schenectady, N. Y.
Master Electric Co., The, Dayton, Ohio
McGill Manufacturing Co., Valparaiso, Ind.
Ohmite Mfg. Co., Chicago, Ill.
Pyle-National Co., Chicago, Ill.
Rees, Mackworth G., Inc., Detroit, Mich.
Shallcross Mfg. Co., Collingdale, Pa.
Square D. Co., Milwaukee, Wis.
Trumbull Electric Mfg. Co., Plainville, Conn.
Weltronic Co., Detroit, Mich.
Westinghouse Elec. Corp., Pittsburgh, Pa.

SWITCHES, Safety

Arrow-Hart & Hegeman Electric Co., Hartford, Conn.
Crouse-Hinds Co., Syracuse, N. Y.
Cutler-Hammer, Inc., Milwaukee, Wis.
Electric Controller & Mfg. Co., Cleveland, Ohio
Federal Electric Products Co., Newark, N. J.
General Electric Co., Schenectady, N. Y.
Hays Mfg. Co., Erie, Pa.
Pyle-National Co., Chicago, Ill.
Rees, Mackworth G., Inc., Detroit, Mich.
Square D. Co., Milwaukee, Wis.
Trumbull Electric Mfg. Co., Plainville, Conn.
Westinghouse Electric Corp., Pittsburgh, Pa.

SWITCHES, Stepping

Albert & J. M. Anderson Mfg. Co., Boston, Mass.
Clare, C. P., & Co., Chicago, Ill.
Cutler Hammer, Inc., Milwaukee, Wis.
Federal Telephone & Radio Corp., Clifton, N. J.
General Electric Co., Schenectady, N. Y.
Industrial Timer Corp., Newark, N. J.
Minneapolis-Honeywell Reg. Co., S. Minneapolis, Minn.
Shallcross Mfg. Co., Collingdale, Pa.

TANK HEADS (Spun or Pressed)

Commercial Shearing & Stamping Co., The, Youngstown, Ohio
Lukens Steel Co., Coatesville, Pa.
Pressed Steel Tank Co., Milwaukee, Wis.
Republic Steel Corp., Cleveland, Ohio

TOGGLE CLAMPS

Apex Welding & Fabricating Corp., 10540 Reserve Court, Cleveland 6, Ohio
Danly Mach. Specialties Co., Inc., Chicago, Ill.
Detroit Stamping Co., Detroit, Mich.
General Welding Corp., Cleveland, Ohio
Lapeer Mfg. Co., Lapeer, Mich.
Mechanics Engineering Co., Jackson, Mich.
National Cylinder Gas Co., Chicago, Ill.
Petersen Mfg. Co., Inc., De Witt, Neb.
Smith, Seymour, & Son, Inc., Oakville, Conn.
West Point Mfg. Co., Detroit, Mich.
Wolverine Tool Co., Detroit, Mich.

TROLLEYS, TRACKS and TRAINWAYS

Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
Cleveland Crane & Engineering Co., The, Wickliffe, Ohio
Coffing Hoist Co., Danville, Ill.
Columbus-McKinnon Chain Corp., Tonawanda, N. Y.
Conco Engineering Works, Mendota, Ill.
Harrington Co., Philadelphia, Pa.
Industrial Equipment Co., Chicago, Ill.
Round, David & Son, Cleveland, Ohio
Stryco Mfg. Co., San Francisco, Calif.
Wright Hoist Div. of American Chain & Cable Co., Inc., York, Pa.

VALVES, Air Operated

Taylor-Winfield Corp., Warren, Ohio

VISE JAWS

Armstrong Bros. Tool Co., Chicago, Ill.
Columbian Vise & Mfg. Co., The, Cleveland, Ohio
Desmond-Stephan Mfg. Co., Urbana, Ohio
Grand Specialties Co., Chicago, Ill.
Lord, Robert S., Co., Eau Claire, Wis.
Parker, Charles Co., The, Meriden, Conn.
Richards-Wilcox Mfg. Co., Aurora, Ill.
Ridge Tool Co., The, Elyria, Ohio
Sherman, H. B., Mfg. Co., Battle Creek, Mich.
Williams, J. H., & Co., Buffalo, N. Y.
Wilton Tool Mfg. Co., Chicago, Ill.

VISES, Machinists'

American Scale Co., Kansas City, Mo.
Armstrong Bros. Tool Co., Chicago, Ill.
Athol Machine & Foundry Co., Athol, Mass.
Belmont Abrasives, Boston, Mass.
Brown & Sharpe Mfg. Co., Providence, R. I.
Cardinal Machine Co., Glendale, Calif.
Chicago Tool & Engineering Co., Chicago, Ill.
Columbian Vise & Mfg. Co., The, Cleveland, Ohio
Desmond-Stephan Mfg. Co., Urbana, Ohio
Hollands Mfg. Co., Erie, Pa.
Lapeer Mfg. Co., Lapeer, Mich.
Morgan Vise Co., Chicago, Ill.
Munton Mfg. Co., Franklin Park, Ill.
National Machine Tool Co., Racine, Wis.
North Bros. Mfg. Co., Division of The Stanley Works, Philadelphia, Pa.
Parker, Charles Co., The, Meriden, Conn.
Production Devices, Inc., Whitehall, N. Y.
Skinner Chuck Co., The, New Britain, Conn.
Studebaker Machine Co., Maywood, Ill.
Universal Engineering Co., San Diego, Calif.
Wilton Tool Mfg. Co., Chicago, Ill.

VISES, Pipe

American Pipe Tool Co., Chicago, Ill.
American Scale Co., Kansas City, Mo.
Armstrong Bros. Tool Co., Chicago, Ill.
Athol Machine & Foundry Co., Athol, Mass.
Beaver Pipe Tools, Inc., Warren, Ohio
Billings & Spencer Co., The, Hartford, Conn.
Capewell Mfg. Co., The, Hartford, Conn.
Columbian Vise & Mfg. Co., The, Cleveland, Ohio
Crane Co., Chicago, Ill.
Desmond-Stephan Mfg. Co., Urbana, Ohio
Grand Specialties Co., Chicago, Ill.
Hollands Mfg. Co., Erie, Pa.
Imperial Brass Mfg. Co., The, Chicago, Ill.
Morgan Vise Co., Chicago, Ill.
Nye Tool & Machine Co., Chicago, Ill.
Pearless Machine Co., Racine, Wis.
Reed Mfg. Co., Erie, Pa.
Ridge Tool Co., The, Elyria, Ohio
Toledo Pipe Threading Machine Co., The, Toledo, Ohio
Trimont Mfg. Co., Div. of Astna Industrial Corp., Roxbury, Boston, Mass.
Wilton Tool Mfg. Co., Chicago, Ill.

VISES, Quick-Action

American Scale Co., Kansas City, Mo.
Cardinal Machine Co., Glendale, Calif.
Chicago Tool & Engineering Co., Chicago, Ill.
Columbian Vise & Mfg. Co., Cleveland, Ohio
Desmond-Stephan Mfg. Co., Urbana, Ohio
Grand Specialties Co., Chicago, Ill.
Lapeer Mfg. Co., Lapeer, Mich.
Morgan Vise Co., Chicago, Ill.
National Machine Tool Co., Racine, Wis.
Production Devices, Inc., Whitehall, N. Y.
Richards-Wilcox Mfg. Co., Aurora, Ill.
Skinner Chuck Co., The, New Britain, Conn.
Studebaker Machine Co., Maywood, Ill.

RUGGED!

ATLAS
WELD CLEANING TOOLS
27 MODELS
Solar steel heads • Induction hardened • Silver brazed steel handles • Metal or wood grips • Perfect balance.
ATLAS WELDING ACCESSORIES CO.
707 E. LEWISTON DETROIT 20, MICH.

WELD-CLEANING BRUSHES

(See also: "Weld Cleaning Tools")

Anderson Corp., Worcester, Mass.
Atlas Welding Accessories Co., Ferndale, Mich.
Bernard Welding Equipment Co., Chicago, Ill.
Hewitt Rubber Div., Hewitt-Robins, Inc., Buffalo, N. Y.
Industrial Products Co., Philadelphia, Pa.
Manufacturers Brush Co., The, Cleveland, Ohio
Milwaukee Brush Mfg. Co., The, Milwaukee, Wis.
Osborn Mfg. Co., Cleveland, Ohio
Pittsburgh Plate Glass Co., Brush Div., Baltimore, Md.
Strand, N. A., Div., The Belmar Corp., Chicago, Ill.

WELD-CLEANING TOOLS

(See also: "Weld-Cleaning Brushes," "Chipping and Scaling Hammers," "Wire Brushes," etc.)

American Wheelabrator & Equipment Corp., Mishawaka, Ind.
Atlas Welding Accessories Co., Ferndale, Mich.
Bernard Welding Equipment Co., Chicago, Ill.
Buckeye Tool Corp., Dayton, Ohio
Carter-Lockerd Co., Los Angeles, Calif.
Chicago Pneumatic Tool Co., New York, N. Y.
Cincinnati Tool Co., Norwood, Cincinnati, Ohio
Cleco Div. of Reed Roller Bit Co., Houston, Texas
Coast Pneumatic Tool Co., Los Angeles, Calif.
Dallett Co., The, Philadelphia, Pa.
Manufacturing Brush Co., The, Cleveland, Ohio
Marquette Mfg. Co., Inc., Minneapolis, Minn.
Millers Falls Co., Greenfield, Mass.
Osborn Manufacturing Co., The, Cleveland, Ohio
Quality Tools Corp., New Wilmington, Pa.
Rotor Tool Co., The, Cleveland, Ohio
Superior Pneumatic Division of Herband Tools, Cleveland, Ohio
Thor Power Tool Co., Aurora, Ill.
Weldit, Inc., Detroit, Mich.

WET BLASTING MACHINES

American Wheelabrator & Equipment Corp., Mishawaka, Ind.
Pangborn Corp., Hagerstown, Md.
Vacu-Blast Co., Inc., Belmont, Calif.
Wet Blast Mfg. Co., Inc., Detroit, Mich.

WIRE BRUSHES, Hand

Anderson Corp., Worcester, Mass.
Atlas Welding Accessories Co., Ferndale, Mich.
Fibre-Metal Products Co., The, Chester, Pa.
Herbrand Tools, Fremont, Ohio
Manufacturers Brush Co., The, Cleveland, Ohio
Milwaukee Brush Manufacturing Co., The, Milwaukee, Wis.
Osborn Manufacturing Co., Cleveland, Ohio
Pittsburgh Plate Glass Co., Brush Div., Baltimore, Md.
Solo-Horton Brush Co., Inc., New York, N. Y.

WIRE BRUSHES, Rotary and Cup, Power

L. B. Allen Co., Inc., Chicago, Ill.
Anderson Corp., Worcester, Mass.
Black & Decker Mfg. Co., Towson, Md.
Herbrand Tools, Fremont, O.
Hewitt-Robins, Inc., Stamford, Conn.
Manufacturers Brush Co., The, Cleveland, Ohio
Milwaukee Brush Manufacturing Co., The, Milwaukee, Wis.
Osborn Manufacturing Co., Cleveland, Ohio
Pittsburgh Plate Glass Co., Brush Div., Baltimore, Md.
Skill Corp., Chicago, Ill.
Solo-Horton Brush Co., Inc., New York, N. Y.
Swiss Laboratory, Cleveland, Ohio
United States Electric Tool Co., The, Cincinnati, Ohio

WIRE CLOTH

Chase Brass & Copper Co., Waterbury, Conn.
Hewitt-Robins, Inc., Stamford, Conn.

WIRE CUTTERS

Aircraft-Marine Products, Inc., Harrisburg, Pa.
Armstrong-Blum Mfg. Co., Chicago, Ill.
Bartlett Mfg. Co., Detroit, Mich.
Champion De Arment Tool Co., Meadville, Pa.
Crescent Tool Co., Jamestown, N. Y.
Duro Metal Products Co., Chicago, Ill.
Eisler Engineering Co., Inc., Newark, N. J.
Ideal Industries, Inc., Sycamore, Ill.
Lewis Machine Co., The, Cleveland, Ohio
Manco Mfg. Co., Bradley, Ill.
O'Neil-Irwin Mfg. Co., Lake City, Minn.
Porter, H. K., Inc., Somerville, Mass.
Sandvik Saw & Tool (Division of Sandvik Steel Inc.), New York, N. Y.

WIRE ROPE

American Cable Division of American Chain & Cable Co., Inc., Wilkes-Barre, Pa.
American Steel & Wire Co., Cleveland, Ohio
Bethlehem Steel Co., Bethlehem, Pa.
Broderick & Bascom Rope Co., St. Louis, Mo.
Colorado Fuel and Iron Corp., Denver, Colo.
Columbia Steel Co., United States Steel Corp., Subsidiary, San Francisco, Calif.
Crucible Steel Co. of America, New York, N. Y.
Hazard Wire Rope Division of American Chain & Cable Co., Inc., Wilkes-Barre, Pa.
Johnson Steel & Wire Co., Inc., Worcester, Mass.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Lamson & Sessions Co., The, Cleveland, Ohio
LeTourneau, R. G., Inc., Peoria, Ill.

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Roebling's, John A., Sons Corp., Trenton, N. J.
Sasgen Derrick Co., Chicago, Ill.
Sunbury Wire Rope Mfg. Co., Sunbury, Pa.
Upson-Walton Co., The, Cleveland, Ohio

WIRE ROPE SLINGS

American Cable Division of American Chain & Cable Co., Inc., Wilkes-Barre, Pa.
American Steel & Wire Co., Cleveland, Ohio
Bethlehem Steel Co., Bethlehem, Pa.
Broderick & Bascom Rope Co., St. Louis, Mo.
Colorado Fuel and Iron Corp., Denver, Colo.
Hazard Wire Rope Division of American Chain & Cable Co., Inc., Wilkes-Barre, Pa.
Macwhyte Co., Kenosha, Wis.
Paulson-Webber Cordage Corp., New York, N. Y.
Roebling's, John A., Sons, Co., Trenton, N. J.
Sunbury Wire Rope Mfg. Co., Sunbury, Pa.
Upson-Walton Co., The, Cleveland, Ohio

WIRE STRAIGHTENERS

Aufhauser Bros. Co., New York, N. Y.
Eisler Engineering Co., Inc., Newark, N. J.
Lewis Machine Co., The, Cleveland, Ohio
Metallizing Engineering Co., Long Island City, N. Y.

WORK BENCHES, Steel

Angle Steel Stool Co., Plainwell, Mich.
Aurora Equipment Co., Equipto Division, Aurora, Ill.
Berger Manufacturing Division, Republic Steel Corp., Canton, Ohio
Bond Foundry and Machine Co., Manheim, Pa.
Challenge Machinery Co., The, Grand Haven, Mich.
Delta Mfg. Division of Rockwell Mfg. Co., Milwaukee, Wis.
Lyon Metal Products, Inc., Aurora, Ill.
Market Forge Co., Everett, Mass.
Republic Steel Corp., Cleveland, Ohio
Richards-Wilcox Mfg. Co., Aurora, Ill.
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MATERIALS

No provisions have been made in the NWSA Welding Supply Index for cataloging the sources of various materials that are important to welding.

Very few welding distributors sell basic materials used in welding operations, but this source information is of vital interest to the readers of WELDING ENGINEER Fact File Issue.

For many years, mild steel has been the most popular material for welded fabrications. This probably will remain true for many more years, but because of improved welding processes and techniques, other materials are gaining favor. There is a continuing increase in the amounts of stainless steel, aluminum, copper, magnesium and titanium being welded.

While materials in this classification are confined to metals, it will not be too long before the Fact File Issue will have to include data on weldable plastics and glass. We have yet to find a way to weld wood, but this accomplishment is not beyond the realm of possibility in view of present laboratory research.

When it comes to metals, however, it is well to remember that all are weldable, provided the proper process and the proper technique is employed.

ALUMINUM—Granulated, Ingots and Solder, Etc.

Allen, L. B., Co., Inc., Chicago, Ill.
Aluminum Company of America, Pittsburgh, Pa.
American Smelting & Refining Co., Fed. Metals Div., New York, N. Y.
Belmont Smelting & Refining Works, Inc., Brooklyn, N. Y. (All)
Eutectic Welding Alloys Corp., Flushing, N. Y.
Federated Metals Div. Amer. Smelting & Refining Co., N. Y., N. Y.
Flux-All Chemical Products, New York, N. Y.
Johnson Mfg. Co., Inc., Mount Vernon, Iowa
Kester Solder Co., Chicago, Ill. (Solder)
Permalatem Welding Alloys Inc., Red Bank, N. J.
Reynolds Metals Co., Louisville, Ky.
Sall, George, Metals Co., Philadelphia, Pa.
Sightmaster Corp., New Rochelle, New York
Swiss Laboratory, Cleveland, Ohio

ALUMINUM, Sheet and Plates, Clad.

Aluminum Co. of America Pittsburgh, Pa.
Colonial Alloys Co., Philadelphia, Pa.
Kaiser Aluminum & Chemical Sales, Inc., Oakland, Calif.
Reynolds Metal Co., Richmond, Va.
Wickwire Spencer Steel Div., Colorado Fuel & Iron Corp., New York, N. Y.

ALUMINUM, Sheets, Plates, Structural Shapes, Extrusions, Etc.

Aluminum Co. of America, Pittsburgh, Pa.
Aluminum Wire Prod. Co., Inc., Glastonbury, Conn.
Bissett Steel Co., The, Cleveland, Ohio
Blum, Julius & Co., Inc., New York, N. Y.
Braun, J. G., Co., Chicago, Ill.
Bridgeport Brass Co., Bridgeport, Conn.
Central Steel and Wire Co., Chicago, Ill.
Colonial Alloys Co., Philadelphia, Pa.
Kaiser Aluminum & Chemical Sales, Oakland, Calif.
Revere Copper & Brass inc., New York, N. Y.
Reynolds Metals Co., Louisville, Ky.
Wickwire Spencer Steel Div., Colorado Fuel & Iron Corp., New York, N. Y.

ALUMINUM TUBING

Aluminum Co. of America, Pittsburgh, Pa.
American Brass Co., Waterbury, Conn.
Bissett Steel Co., The, Cleveland, Ohio
Blum, Julius & Co., Inc., New York, N. Y.
Braun, J. G. Co., Chicago, Ill.
Bridgeport Brass Co., Bridgeport, Conn.
Colonial Alloys Co., Philadelphia, Pa.
Flexonics Corp., Maywood, Ill.
Revere Copper & Brass, Inc., New York, N. Y.
Reynolds Metals Co., Louisville, Ky.
United Wire & Supply Corp., Cranston, R. I.

BABBITT METAL

Alpha Metals, Inc., Brooklyn, N. Y.
American Smelting & Refining Co., Fed. Metals Div., New York, N. Y.
Belmont Smelting & Refining Works, Inc., Brooklyn, N. Y.
Bond, Charles Co., Philadelphia, Pa.
Bunting Brass & Bronze Co., The, Toledo, Ohio
Chase Brass & Copper Co., Inc., Waterbury, Conn.
Division Lead Co., Summit, Ill.
Dodge Manufacturing Corp., Mishawaka, Ind.
Eagle-Picher Co., The, Cincinnati, Ohio
Gardiner Metal Co., Chicago, Ill.
Johnson Bronze Co., New Castle, Pa.
McCauley Alloy Co., Chicago Heights, Ill.
Magnolia Metal Co., Elizabeth, N. J.
National Lead Co., New York, N. Y.
Randall Graphite Bearings, Inc., Lima, Ohio
Ryerson, Joseph T., & Son Inc., Chicago, Ill.
Shook Bronze Corp., Lima, Ohio

BRASS AND COPPER TUBING

American Brass Co., The, American Metal Hose Branch, Waterbury, Conn.
Blum, Julius & Co., Inc., New York, N. Y.
Braun, J. G., Co., Chicago, Ill.
Bridgeport Brass Co., Bridgeport, Conn.
Chase Brass Mfg. Co., Inc., Waterbury, Conn.
Flexonics Corp., Maywood, Ill.
Imperial Brass Mfg. Co., Chicago, Ill.
Mueller Brass Co., Port Huron, Mich.
Parker Appliance Co., Inc., The, Cleveland, Ohio
Phelps Dodge Copper Products Corp., New York, N. Y.
Revere Copper & Brass, Inc., New York, N. Y.
Scovill Mfg. Co., Waterbury, Conn.
United Wire & Supply Corp., Cranston, R. I.

BRASS, Bars and Sheets

American Brass Co., Waterbury, Conn.
American Silver Co., Inc., Flushing, N. Y.
Bridgeport Brass Co., Bridgeport, Conn.
Central Steel and Wire Co., Chicago, Ill.
Chase Brass & Copper Co., Waterbury, Conn.
Johnson Bronze Co., Newcastle, Pa.
Mueller Brass Co., Port Huron, Mich.
Phelps Dodge Copper Products Corp., New York, N. Y.
Revere Copper & Brass, Inc., New York, N. Y.
Scovill Mfg. Co., Waterbury, Conn.
Titan Metal Mfg. Co., Bellefonte, Pa.

BRONZE, Bars and Sheets, Rolled

American Brass Co., The, Waterbury, Conn.
American Silver Co., Inc., Flushing, N. Y.
Ampco Metal, Inc., Milwaukee, Wis.
Anaconda Wire & Cable Co., New York, N. Y.
Bissett Steel Co., The, Cleveland, Ohio
Braun Co., J. G., Chicago, Ill.
Bridgeport Brass Co., Bridgeport, Conn.
Bunting Brass & Bronze Co., Toledo, Ohio
Chase Brass & Copper Co., Waterbury, Conn.
Johnson Bronze Co., New Castle, Pa.
Mallory, P. R. & Co., Inc., Indianapolis, Ind.
Phelps Dodge Copper Products Corp., New York, N. Y.
Phosphor Bronze Co., The, Seymour, Conn.
Revere Copper & Brass, Inc., New York, N. Y.
Scovill Mfg. Co., Waterbury, Conn.
Seymour Mfg. Co., The, Seymour, Conn.

BRONZE—Casting or Ingots—Aluminum, Manganese and Phosphor

American Smelting & Refining Co., Fed. Metals Div., New York, N. Y.
Ampco Metal, Inc., Milwaukee, Wis.
Belmont Smelting & Refining Works, Inc., Brooklyn, N. Y.
Phosphor Bronze Co., The, Seymour, Conn.
Turner Brass Works, The, Sycamore, Ill.

CLAD STEEL, Copper

American Silver Co., Inc., Flushing, N. Y.
Lukens Steel Co., Coatesville, Pa.

CLAD STEEL, Inconel

International Nickel Co., Inc., New York, N. Y.
Lukens Steel Co., Coatesville, Pa.

CLAD STEEL, Monel

American Nickeloid Co., Peru, Ill.
International Nickel Co., Inc., New York, N. Y.
Lukens Steel Co., Coatesville, Pa.

CLAD STEEL, Nickel

American Nickeloid Co., Peru, Ill.
American Silver Co., Inc., Flushing, N. Y.
International Nickel Co., Inc., New York, N. Y.
Lukens Steel Co., Coatesville, Pa.
Republic Steel Corp., Cleveland, Ohio
Superior Steel Corp., Carnegie, Pa.
Wickwire Spencer Steel Div., Colorado Fuel & Iron Corp., New York, N. Y.

CLAD STEEL, Silver

American Silver Co., Inc., Flushing, N. Y.
Sherman & Co., Flushing, N. Y.

CLAD STEEL, Stainless

Allegheny Ludlum Steel Corp., Pittsburgh, Pa.
Castle, A. M., & Co., Chicago, Ill.
Crucible Steel Co. of America, New York, N. Y.
Granite City Steel Co., Granite City, Ill.
Ingersoll Steel Div., Borg-Warner Corp., Chicago, Ill.
Jessop Steel Co., Washington, Pa.
Lukens Steel Co., Coatesville, Pa.
Republic Steel Corp., Cleveland, Ohio
Ryerson, Joseph T. & Son, Inc., Chicago, Ill.
Sharon Steel Corp., Sharon, Pa.
Wickwire Spencer Steel Div., Colorado Fuel & Iron Corp., New York, N. Y.
Worth Steel Co., Claymont, Del.

COPPER, Bars and Sheets

American Brass Co., Waterbury, Conn.
American Silver Co., Inc., Flushing, N. Y.
Ampco Metal, Inc., Milwaukee, Wis.
Bissett Steel Co., The, Cleveland, Ohio
Bridgeport Brass Co., Bridgeport, Conn.
Central Steel & Wire Co., Chicago, Ill.
Chase Brass & Copper Co., Inc., Waterbury, Conn.
Electroloy Co., The, Inc., Bridgeport, Conn.
Phelps Dodge Copper Products Corp., New York, N. Y.
Revere Copper & Brass, Inc., New York, N. Y.
Scovill Mfg. Co., Waterbury, Conn.
Wickwire Spencer Steel Div., Colorado Fuel & Iron Corp., New York, N. Y.

INGOTS

(Refer to specific metal)

MANGANESE STEEL, 11-14%

Allied Tractor & Steel Prod. Corp., Cleveland, Ohio
American Manganese Steel Div. of American Brake Shoe Co., Chicago Heights, Ill.
Bethlehem Steel Co., Bethlehem, Pa.
Castle, A. M., & Co., Chicago, Ill.
Manganese Steel Forge Co., Philadelphia, Pa.
Republic Steel Corp., Cleveland, Ohio
Ryerson, J. T., & Son, Inc., Chicago, Ill.
Standard Steel & Wire Co., Bolivar, Pa.
Stulz Sickles Co., Newark, N. J.
Wickwire Spencer Steel Div., Colorado Fuel & Iron Corp., New York, N. Y.

MAGNESIUM—Sheets, Plates, Bars, Etc.

American Magnesium Corp., Pittsburgh, Pa.
Belmont Smelting Refining Works, Inc., Brooklyn, N. Y.
Brooks & Perkins, Inc., Detroit, Mich.
Dow Chemical Co., The, Midland, Mich
Revere Copper & Brass, Inc., New York, N. Y.
White Metal Rolling & Stamping Corp., Brooklyn, N. Y.

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NICKEL MANGANESE STEEL

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Firth Sterling, Inc., Pittsburgh, Pa.
Handy & Harmon, New York, N. Y.
Manganese Steel Forge Co., Philadelphia, Pa.
Ryerson, J. T., & Son, Inc., Chicago, Ill.
Stulz Sickles Co., Newark, N. J.

PLATES, Steel

(See: "Steel, Sheets, Plates, Bars, and Structural Shapes, Etc.")

STAINLESS STEEL

Allegheny Ludlum Steel Corp., Pittsburgh, Pa.
American Chain & Cable, Monessen, Pa.
American Silver Co., Inc., Flushing, N. Y.
American Steel & Wire Co., Cleveland, Ohio
Armco Steel Corp., Middletown, Ohio
Bethlehem Steel Co., Bethlehem, Pa.
Bissett Steel Co., The, Cleveland, Ohio
Carnegie-Illinois Steel Corp., Pittsburgh, Pa.
Carpenter Steel Co., The, Reading, Pa.
Castle, A. M., & Co., Chicago, Ill.
Central Steel & Wire Co, Chicago, Ill.
Crucible Steel Co. of America, Pittsburgh, Pa.
Disston, Henry & Sons, Inc., Tacony, Philadelphia, Pa.
Eastern Stainless Steel Corp., Baltimore, Md.
Firth Sterling, Inc., Pittsburgh, Pa.
Ingersoll Steel Div., Borg-Warner Corp., Chicago, Ill.
Jessop Steel Co., Washington, Pa.
Lukens Steel Co., Coatesville, Pa.
Manganese Steel Forge Co., Philadelphia, Pa.
Republic Steel Corp., Cleveland, Ohio
Rustless Iron and Steel Corp., Baltimore, Md.
Ryerson, Joseph T. & Son, Inc., Chicago, Ill.
Sharon Steel Corp., Sharon, Pa.
Steel Sales Corp., Chicago, Ill.
Superior Steel Corp., Carnegie, Pa.
Timken Roller Bearing Co., Canton, Ohio
United States Steel Co., Pittsburgh, Pa.
U. S. Steel Supply Co., Chicago, Ill.
Washington Steel Corp., Washington, Pa.
Wickwire Spencer Steel Div., Colorado Fuel & Iron Corp., New York, N. Y.

STEEL (SHEETS, PLATES, BARS, STRUCTURAL SHAPES, Etc.)

American Chain & Cable, Monessen, Pa.
Apollo Steel Co., Pittsburgh, Pa.
Armco Steel Corp., Middletown, Ohio
Bethlehem Steel Co., Bethlehem, Pa.
Carnegie-Illinois Steel Corp., Pittsburgh, Pa.
Castle, A. M., & Co., Chicago, Ill.
Central Steel & Wire Co., Chicago, Ill
Columbia Steel Co., San Francisco, Calif.
Disston, Henry, & Sons, Inc., Tacony, Philadelphia, Pa.
Firth Sterling, Inc., Pittsburgh, Pa.
Great Lakes Steel Corp., Detroit, Mich.
Granite City Steel Co., Granite City, Ill.
Heller Brothers Co., Newark, N. J.
Ingersoll Steel Div., Borg-Warner Corp., Chicago, Ill.
Inland Steel Co., Chicago, Ill.
National Steel Corp., Ecorse, Detroit, Mich.
Reliance Steel Div., Detroit Steel Corp., Cleveland, Ohio
Republic Steel Corp., Cleveland, Ohio
Roebling's Sons Co., John A., Trenton, N. J.
Rustless Iron & Steel Corp., Baltimore, Md.
Ryerson, Joseph T., & Son, Inc., Chicago, Ill.
Sharon Steel Corp., Sharon, Pa.
Taylor-Wharton Iron & Steel Co., High Ridge, N. J.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
U. S. Steel Supply Co., Chicago, Ill.
United States Steel Co., Pittsburgh, Pa.
Wickwire Spencer Steel Div. Colorado Fuel & Iron Corp., New York, N. Y.
Worth Steel Co., Claymont, Del.
Wyckoff Steel Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., Youngstown, Ohio

STEEL TUBING

Allegheny-Ludlum Steel Corp., Pittsburgh, Pa.
American Metal Products Co., Detroit, Mich.
Armco Steel, Inc., Middletown, Ohio
Babcock & Wilcox Tube Co., The, Alliance, Ohio (welded) and Beaver Falls, Pa. (seamless).
Bethlehem Steel Co., Bethlehem, Pa.
Bissett Steel Co., The, Cleveland, Ohio
Blum, Julius & Co., Inc., New York, N. Y.
Braun, J. G. Co., Chicago, Ill.
Bundy Tubing Co., Detroit, Mich.
Byers Co., A. M., Pittsburgh, Pa.
Carpenter Steel Co., The, Reading, Pa.
Central Steel and Wire Co., Chicago, Ill.
Crucible Steel Co. of America, Pittsburgh, Pa.
Flexonics Corp., Maywood, Ill.
Globe Steel Tubes Co., Milwaukee, Wis.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Michigan Steel Tube Products Co., Detroit, Mich.
National Electric Products Corp., Pittsburgh, Pa.
National Tube Co., Div., U. S. Steel Corp., Pittsburgh, Pa.
Ohio Seamless Tube Co., The Shelby, Ohio
Pittsburgh Steel Co., Pittsburgh, Pa.
Republic Steel Corp., Steel & Tubes Div., Cleveland, Ohio
Revere Copper & Brass, Inc., New York, N. Y.
Ryerson, Joseph T. & Sons, Inc., Chicago, Ill.
Sightmaster Corp., New Rochelle, N. Y.
Standard Tube Co., The, Detroit, Mich.
Superior Tube Co., Norristown, Pa.
Superior Steel Corp., Chicago, Ill.
Trent Tube Co., Div. of Crucible Steel Co., East Troy, Wis. (stainless and inconel only).
Timken Roller Bearing Co., Steel and Tube Div., Canton, Ohio
Tubular Alloy Steel Corp., Gary, Ind.
Tubular Service Corp., New York, N. Y.
Uniworld Research Corp. of America, Cleveland, Ohio
U. S. Steel Supply Co., Chicago, Ill.
Youngstown Sheet & Tube Co., The, Youngstown, Ohio
Youngstown Welding & Engineering Co., The, Youngstown, Ohio

STEEL WIRE

American Steel & Wire Co., Cleveland, Ohio
Bethlehem Steel Co., Bethlehem, Pa.
Bissett Steel Co., The, Cleveland, Ohio
Buffalo Bolt Co., North Tonawanda, N. Y.
Carnegie-Illinois Steel Corp., Div. of U. S. Steel Corp., Pittsburgh, Pa.
Carpenter Steel Co., The, Reading, Pa.
Colorado Fuel and Iron Corp., Denver, Colo.
Columbia Steel Co., United States Steel Corp., Subsidiary, San Francisco, Calif.
Drawalloy Corp., York, Pa.
Firth Sterling, Inc., Pittsburgh, Pa.
Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
Page Steel & Wire Div. American Chain & Cable Co., Inc., Monessen, Pa.
Roebling's, John A., Sons, Co., Trenton, N. J.
Sight Feed Generator Co., West Alexandria, Ohio
Truscon Steel Co., Youngstown, Ohio
United States Steel Co., Pittsburgh, Pa.
Weldit, Inc., Detroit, Mich.
Wheeling Steel Corp., Wheeling, W. Va.
Wickwire Spencer Steel Division, The Colorado Fuel & Iron Corp., Buffalo, N. Y.
Youngstown Sheet and Tube Co., Youngstown, Ohio

TITANIUM

Crane Co., Chicago, Ill.
Electro Metallurgical Div., Union Carbide and Carbon Corp., Niagara Falls, N. Y.
Mallory-Sharon Titanium Corp., Niles, Ohio
Rem-Cru Titanium, Inc., Midland, Pa.
Titanium Alloy Mfg. Div., National Lead Co., New York, N. Y.
Titanium Metals Corp. of America, New York, N. Y.

ZINC SHEETS and BARS

American Zinc Products Co., The, Greencastle, Ind.
Belmont Smelting & Refining Works, Inc., Brooklyn, N. Y.
Cleveland Precision Ring Prod. Co., The, Cleveland, Ohio
Consolidated Metals Corp., Detroit, Mich.
Eagle-Picher Sales Co., The, Cincinnati, Ohio
New Jersey Zinc Co., The, New York, N. Y.

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WELDING ENGINEER'S

1955 Fact File Issue

WROUGHT STAINLESS-STEEL FORMS AND WELDABILITY

		Available Forms					Weldability			Outstanding Characteristics
		Plate	Sheet	Strip	Bar	Wire	Arc	Gas	Resistance	
AUSTENITIC	301	X	X	X	X	X	B	B	A	General utility stainless; good working qualities.
	302	X	X	X	X	X	A	X	A	Readily fabricated.
	308	X	X	X	X	X	A	X	A	Used where better corrosion resistance than 18-8 is needed.
	309	X	X	X	X	X	B	X	A	High strength and high scaling resistance at high temperatures.
	310	X	X	X	X	X	A	X	A	Higher nickel content for greater stability at welding temperatures.
	316	X	X	X	X	X	A	B	A	Superior resistance to chemical corrosion.
	317	X	X	X	X	X	A	B	A	Higher alloy content than 316 for better corrosion resistance.
	321	X	X	X	X	X	A	B	A	Titanium-stabilized to prevent carbide precipitation when heated.
	347	X	X	X	X	X	A	B	A	Columbium-stabilized to prevent carbide precipitation.
MARTENSITIC	403	X	X	–	X	X	B	B	B	Low chromium content.
	410	X	X	X	X	X	B	X	B	General-purpose, heat-treatable stainless. Low cost.
	414	X	X	X	X	X	B	X	B	Nickel added for toughness.
	416	–	–	–	X	X	N.A.	X	N.A.	Free-machining, 12% chromium.
	420	–	X	–	X	X	B	X	B	Carbon provides hardness.
	431	X	X	X	X	X	B	B	B	High mechanical properties.
	440A	–	–	–	X	X	No	X	N.A.	Highest hardness of all stainless steels.
	440B	–	–	–	X	X	No	X	N.A.	Best combination of properties of 440 grades.
	440C	–	–	–	X	X	No	X	N.A.	Least tough of 440 grades but highest abrasion resistance.
	501	X	X	X	X	X	B	X	B	Corrosion resistance rather than stainless; good strength
	502	X	X	X	X	X	B	X	B	at high temperatures.
FERRITIC	405	X	X	X	X	X	B	X	B	Non-hardening when air cooled from high temperatures.
	406	–	–	–	X	X	B	X	B	For electrical resistance. Resists high-temperature oxidation.
	430	X	X	X	X	X	B	X	B	An easily formed stainless. Low cost.
	430F	–	–	–	X	X	B	X	B	Free-machining variety 430 grade.
	446	X	X	X	X	X	B	X	B	Best scaling resistance and highest chromium content.

A – readily weldable. B – weldable under favorable conditions. X – weldable by gas process in 20 ga. or thinner
N.A. – No welding information available.

A B C's of Galvanic Corrosion*

If two unlike metals are connected to one another in a corrosive liquid such as brine, one metal is often corroded at a much faster rate than usual, while the other metal either remains clean or is corroded at a much slower rate than usual. This type of corrosion is always associated with the generation of electrical current and hence is described as galvanic corrosion. It is the galvanic action which speeds up corrosion beyond the ordinary rate. The metal corroded by the galvanic effect is said to be anodic; the more or less protected metal is termed cathodic. Corrosion engineers also speak of the cathode as the "more noble" metal and the anode as the "less noble" metal—using the word "noble" in a broader sense than its original meaning in the case of precious metals such as gold and platinum.

Galvanic Series

Experiments have been conducted to arrange metals in a galvanic series. Such a series shows the tendency of metals and alloys to form significant galvanic cells and indicates probable direction of the galvanic effects. Within the galvanic series, the metals and alloys may be divided into groups. The members of a group have no strong tendency to produce galvanic corrosion with each other and so are relatively safe to use in contact with each other unless the area of the less noble metal is markedly smaller than that of the other. The coupling of two metals distant from each other in the series will frequently result in galvanic or accelerated corrosion of the less noble metal. The farther apart the metals stand, the greater will be the galvanic tendency.

The galvanic series given in the middle column is based upon a series of experiments on and practical experience with many common corrosives. It should not be used without additional experimental tests when unusual corrosives are encountered or other unusual conditions prevail.

Anode and Cathode Effect

The relative areas of two metals forming a galvanic couple will have a very important bearing on the extent of the corrosion. Under many conditions the corrosion loss due to galvanic action is very nearly directly proportional to the area of the more noble metal. Thus if a piece of steel is coupled to a piece of copper having a surface area of 100 sq in., the corrosion loss of the steel is increased by an amount which is roughly 50 times what it would be if the same piece of steel were coupled to a piece of copper having an area of 2 sq in. For this reason it is wise to avoid galvanic couples in which the exposed area of the lower (more noble) metal in a galvanic series is much greater than that of the higher or less noble metal. As a practical example, it would be definitely dangerous to use steel welding on a Monel plate but relatively safe to use Monel welding on steel.

Galvanic Series

Corroded End (anodic or least noble)

Magnesium
Magnesium alloys

Zinc

Aluminum 2 S

Cadmium

Aluminum 17 ST

Steel or iron
Cast iron

Chromium-iron (active)

Ni-Resist

18-8 Stainless (active)
18-8-3 Stainless (active)

Lead-tin solders
Lead
Tin

Nickel (active)
Inconel (active)

Brasses
Copper
Bronzes
Copper-nickel alloys
Monel

Silver solder

Nickel (passive)
Inconel (passive)

Chromium-iron (passive)
18-8 Stainless (passive)
18-8-3 Stainless (passive)

Silver
Graphite
Gold
Platinum

Protected End (cathodic or most noble)

Other Influencing Factors

The intensity and distribution of galvanic corrosion is influenced by many factors in addition to those cited above. One of the most important of these is the conductivity of the complete circuit. Since the voltages developed are very low, any practice that will increase the resistance or interrupt the circuit will minimize if not eliminate galvanic action. The partial or complete insulation of the metals at their points of contact or connection is very effective. The hydrogen which collects on the surface of the lesser attacked metal during corrosion acts in effect as an insulator and thus tends to suppress corrosive action on the more attacked surface.

Galvanic action can also be retarded by reducing the amount of dissolved oxygen. Oxygen tends to combine with the newly formed hydrogen and remove it as water. Since the removal of the hydrogen film allows corrosive action to continue, the presence of oxygen should be minimized.

Recommended Practices

(1) Use combinations of metals as close together in the galvanic series as possible.

(2) Keep dissimilar metals as far apart as possible. This rule applies even when the actual connection between the metals is external to the corrosive liquid.

(3) Avoid threaded connections for joining metals well apart in the series. Instead employ brazed joints, using a brazing alloy that is more noble than at least one of the metals to be joined.

(4) Avoid combinations in which the area of the less noble metal is relatively small.

(5) Insulate dissimiliar metals wherever practicable. If complete insulation cannot be achieved, a paint or plastic coating at the joints will increase the resistance in the circuit and so help to reduce corrosion.

(6) Apply coatings with caution. When painting, for example, do not paint the less noble metal without also coating the more noble. Otherwise a greatly accelerated attack may be concentrated at imperfections on the coating of the less noble metal. Coatings, needless to say, should always be kept in good repair.

(7) If practicable, add chemical inhibitors to corrosive solutions.

(8) Install pieces of bare zinc or steel to provide a counteracting galvanic effect tending to suppress unwanted galvanic corrosion.

*Data courtesy Development and Research Division, International Nickel Co., Inc.

TRADE NAME INDEX

An Alphabetical List of Trade Names Employed by Manufacturers of Welding Equipment, Tools and Supplies Whose Products Are Listed in this Buyer's Reference Number, with the Names of the Manufacturers and the Products to Which they Refer.

THE fact that trade names appear in this list does not mean that we guarantee them to be registered or the property of the manufacturers concerned.

WARNING—Therefore, no user of this reference, should, without independent verification, rely upon any information appearing in this section when so doing might result in loss or damage of any kind.—Welding Engineer Publications, Inc.

In the cases where two or more companies have submitted the same trade name for the same product and there is any question as to the rightful owner of the trade name, we have eliminated it entirely from our list.

Where initials are shown as trade names in this list, they are grouped at the start of the listings under each letter. Where two or more separated words or hyphenated words constitute a trade name, such as "Sure Hold" or "Sure-Hold," the first word standing alone determines the location of the listing, whereas when the two words are used as one, such as "Surehold," the name is listed in order according to the entire word.

Some trade names may have been inadvertently omitted. At the same time, some names you consider to be trade names may not be such, in fact. Therefore, if you cannot locate the name for which you are looking in the "Trade Name Index," look for a similar name in the "Classified List" among the manufacturers shown under the product in which you are interested.

A

A—Flux for cast iron welding. Bierman-Everett Foundry Co., Irvington, N. J.

AAA—Hand Hack Blades. E. C. Atkins & Co., Indianapolis, Ind.

ABC—Aluminum welding fluxes No. 8. Anti-Borax Compound Co., Fort Wayne, Ind.

A-C—Welding electrodes, holder and accessories. Allis-Chalmers Mfg. Co., Milwaukee, Wis.

AC-1—Mild steel, A-C—D-C (AWS E-6011) electrode. Harnischfeger Corp, Milwaukee, Wis.

AC-3—Mild steel, A-C—D-C (AWS E-6013) electrode. Harnischfeger Corp., Milwaukee, Wis.

ACU—Oxygen, acetylene, nitrogen. Acetylene Co., of Utah, Salt Lake City, Utah

AC WELD—Carbon electrodes. Speer Carbon Co., St. Marys, Pa.

A.E.—Rust preventatives and removers. Wyandotte Chemical Corp., Wyandotte, Mich.

A.E.F.—Spot butt, seam and tube welders. American Electric Fusion Corp., Chicago, Ill.

AEF Copper—Welding tips for spot welding. American Electric Fusion Corp., Chicago, Ill.

AEF Sealdfit—Hose fittings. American Electric Fusion Corp., Chicago, Ill.

AG—Silver solder flux. Farraloy Co., Philadelphia, Pa.

AH—Industrial controls and enclosed switches. Arrow, Hart & Hegeman Elec. Co., Hartford, Conn.

AHH—Electric switches. Arrow, Hart & Hegeman Elec. Co., Hartford, Conn.

AO—Coats, short jackets, overalls, sleeves, aprons, capes, trousers, spats, legging and gloves. Welding goggles and lenses. American Optical Co., Southbridge, Mass.

AP—Mild steel, reverse polarity (AWS E-6010), electrode. Harnischfeger Corp., Milwaukee, Wis.

APW—Silver brazing alloys. American Platinum Wks., Newark, N. J.

A-R Steel (USS)—Abrasion resisting steel. United States Steel Corporation, Pittsburgh, Pa.

ASMC—Flux. Farraloy Co., Philadelphia, Pa.

AWP—Spectacles and lenses for weldors' and chippers' goggles and helmets. Eastern Equip. Co., Inc., Willow Grove, Pa.

AWP—Welding and brazing wires. Aluminum Wire Products Co., Inc., Glastonbury, Conn.

AW-2B—Manganese molybdenum alloy (AWS E-10020) electrode. Harnischfeger Corp., Milwaukee, Wis.

AW-3C—Austenitic stainless (Type 307) electrode. Harnischfeger Corp., Milwaukee, Wis.

AW-4—Chrome-moly low alloy (AWS E-10012) electrode. Harnischfeger Corp., Milwaukee, Wis.

AW-79—Martensinc steel hard facing rod. American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.

ABRASALOY—Tube, hard facing. Industrial Overlay Metals, Inc., Eaton, Ohio

ABRASIVEWAY—Grinding wheels. Simonds Abrasive Co., Philadelphia, Pa.

ABRASCOTE 10—Alloy steel electrode. Harnischfeger Corp., Milwaukee, Wis.

ABRASCOTE 20—Coated austenitic electrode. Harnischfeger Corp., Milwaukee, Wis.

ABRASOWELD—Hardsurfacing electrode. Lincoln Electric Co., Cleveland, Ohio

ABSO-LUTE—Sealing compound. Key Co., E. St. Louis, Ill.

ACCO—Chain and hooks for chain and wire rope. American Chain Div., American Chain & Cable Co., Inc., York, Pa.

ACE—Projection and scan welders, spot. Peer, Inc., Benton Harbor, Mich.

ACE FLUX—Flux for acetylene welding. Hobart Bros. Co., Troy, Ohio.

ACE-HIGH—Fire Hose. The Home Rubber Co., Trenton, N. J.

ACE WELDER—Leather welding gloves. E. J. Streichert, Chicago, Ill.

ACET-A-TIPS — Soldering Tips. Acet-A-Tips Co., Chicago, Ill.

ACETOGEN—Cutting gases, flame-hardening and priming equipment, generators, flame-cutting machines and tips. Acetogen Gas Co., Detroit, Mich.

ACETYLITE—Automatic Torch Lighter for Oxy-Acetylene Welders. Aufhauser Brothers Corp., New York, N. Y.

ACID-BAN—Safety Goggles. Bausch & Lomb Optical Co., Rochester, N. Y.

ACME—Spot welders and resistance welding equipment. Acme Electric Welder Co., Los Angeles, Calif.

ACME—Welding positioners and automatic welding fixtures and polishing, buffing, grinding and wire brushing, etc., machinery. Acme Mfg. Co., Detroit, Mich.

ACMELOY—Resistance welding electrodes. Acme Electric Co., Los Angeles, Calif.

ACCURATE—Fire extinguishers. Pyrene Manufacturing Co., Newark, N. J.

ACCURATE FREEZING-PROOF CHARGE—Fire extinguisher recharges. Pyrene Manufacturing Co., Newark, N. J.

ACID CAUSTICBOND—Vinyl Chemical and Corrosion Resistant Paint. The Wilbur & Williams Co., Boston, Mass.

ACORN—Bending Blocks. Acorn Iron and Supply Co., Philadelphia, Penn.

ACRO—Resistance welding machinery. Acro Welder Mfg. Co., Milwaukee, Wis.

ACRODIE—Steel Dies. Acromark Co., Elizabeth, N. J.

ACROINK—Metal marking inks. Acromark Co Newark, N. J.

ACROMARK—Marking machines. The Acromark Co., Elizabeth, N. J.

ACROMATIC—Resistance welding machines. Acro Welder Mfg. Co., Milwaukee, Wis.

ACROPRINTER—Welding rod printing machines. Acromark Co., Elizabeth, N. J.

ACROSTAMP—Steel stamps. The Acromark Co., Elizabeth, N J.

ACTARC—Coatings for welding electrodes. Actarc Inc., Cleveland, Ohio

ACTRON—Rectifier tubes and other electronic devices. Allis-Chalmers Mfg. Co., Milwaukee, Wis.

ADALOX—Aluminum oxide coated abrasive. Behr-Manning Corp., Troy, N. Y.

ADA-STIC—High temperature insulating Cement. Botfield Refractories Co., Philadelphia, Pa.

ADACAST—Castable refractory. Botfield Refractories Co., Philadelphia, Pa.

ADACHROME CAST—Chrome ore base castable. Botfield Refractories Co., Philadelphia, Pa.

ADACHROME PLASTIC SUPERCEMENT—Fire brick cement. Botfield Refractories Co., Philadelphia, Pa.

ADACHROME SUPER CEMENT—High Temperature Bonding Mortar, Chrome Base. Botfield Refractories Co., Philadelphia, Pa.

ADAHEARTH — Refractory. Botfield Refractories Co., Philadelphia, Pa.

ADAMANT—Fire brick cement. Botfield Refractories Co., Philadelphia, Pa.

ADAMS—Portable gun type spot welder. Central Corp., Chicago, Ill.

ADAMULL RAMMING MIX—Alumina plastic fire brick material. Botfield Refractories Co., Philadelphia, Pa.

ADAPATCH—Firebrick material. Botfield Refractories Co., Philadelphia, Pa.

ADJUST-A-ANGLE—Angle adapters for resistance welding holders. S-M-S Corp., Detroit, Mich.

ADJUST-A-COLD — Resistance welding holders. S-M-S Corp., Detroit, Mich.

ADJUST-A-LEG—Equalizing slings. The Caldwell Co., Rockford, Ill.

ADJUST-O-LOK—Helmet attachment for headgear. Jackson Products, Inc., Warren, Mich.

ADJUST-A-PRESSURE—Adjustable pressure holders. S-M-S Corp., Detroit, Mich.

ADLER—Portable acetylene generator. Adler Mfg. Co., Milwaukee, Wis.

ADMIRAL—Power transmission cable. National Cable Corp., Milwaukee, Wis.

ADMIRAL—Electric drills, saws, grinders, buffers, etc. Bradford Machine Tool Co., Cincinnati, Ohio

ADVANCE—Rotary wire wheel brushes, weld-cleaning, wire hand and wire cup brushes and weld-cleaning tools. The Manufacturers' Brush Co., Cleveland, Ohio

AERISWELD—Bronze electrode. Lincoln Electric Co., Cleveland, Ohio

AERO—Welding torches. Harris Calorific Co., Cleveland, Ohio

AEROCARB—Liquid carburizing compound. American Cyanamid Co., New York, N. Y.

AEROCASE—Case hardening compound. American Cyanamid Co., New York, N. Y.

AERODYNE—Fans and blowers. The Jeffrey Manfacturing Co., Columbus, Ohio

AERO-GUN—Low resistance test set. Shallcross Mfg. Co., Collingdale, Pa.

AERO HEAT—Heat treating salts. American Cyanamid Co., New York, N. Y.

AERO-JET—Light duty oxyacetylene torch. Marquette Mfg. Co., Inc., Minneapolis, Minn.

AGED-REGREASED—Cocks. Eclipse Fuel Engine Co., Rockford, Ill.

AGILE—Electrodes and welding rods. American Agile Corp., Cleveland, Ohio

AGITON—Aluminum cleaner. Turco Products, Inc., Los Angeles, Calif.
AGITOR—Cleaning machines for metal parts. Gray-Mills Corp., Evanston, Ill.
AGNEW—Brazing machines and resistance welders and transformers. Agnew Electric Co., Milford, Mich.
AGRIPPA—Clamps. J. H. Williams & Co., Buffalo, N. Y.
AIR BLASTER—Ventilating fan. Chelsea Fan & Blower Co., Inc., Irvington, N. J.
AIR WARDEN—Pressure regulators & air filters. Hannifin Corp., Chicago, Ill.
AIRADIATOR—Welding torch nozzle. Victor Equipment Co., San Francisco, Calif.
AIRCO—Acetylene, oxygen, nitrogen, argon and other atmospheric gas products, also welding and cutting apparatus, automatic welding and cutting machines, welding rods, electrodes and supplies. Air Reduction Sales Co., New York, N. Y.
AIRCOMATIC—Mig (metal inert-gas) welding equipment. Air Reduction Sales Co., New York, N. Y.
AIRCOSIL—Brazing alloys. Air Reduction Sales Co., New York, N. Y.
AIRCOSPOT—Tig (tungsten inert-gas) spot welding equipment. Air Reduction Sales Co., New York, N. Y.
AIRCRAFT—Light-duty torch. The K-G Equipment Co., Inc., New York, N. Y.
AIRCRAFTER—Rectifier d-c arc welder. Miller Electric Mfg. Co., Appleton, Wis.
AIRCRAFTER—Welding turntable. Superior Welding Co., Los Angeles, Calif.
AIRCRAFT SPECIAL—Motor generator. Hobart Bros. Co., Troy, Ohio
AIR-FLOW—Air-fed welding helmet. Chicago Eye Shield Co., Chicago, Ill.
AIR—HARDENING—Mortensinc steel hard facing rod. American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
AIR—HYDRAULIC GAP PRESS—Air-hydraulic operated kick presses. Studebaker Machine Co., Maywood, Ill.
AIRLITE—Transparent protective garments. Standard Safety Equipment Co., Chicago, Ill.
AIRLOX—Pneumatic & Hydraulic vises. Production Devices, Inc., Whitehall, N. Y.
AIR-MOVER—Ventilating blowers. Mine Safety Appliance Co., Pittsburgh, Pa.
AIR-O-LINE—Pneumatic controller. Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.
AIRSAN—Grease and air filters and welder filters. Air Filter Corp., Milwaukee, Wis.
"AIR-SPEED"—Multiple resistance welder. The Taylor-Winfield Corp., Warren, Ohio
AIRTAMER—Blow gun. Norgren Co., C. A. Denver, Colo.
AIRTITE—Air and hydraulic vises, valves and cylinders. Production Devices, Inc., Whitehall, N. Y.
AIRTRON—Glass cloth rubber impregnated flexible tubing. Arrowhead Rubber Co., Los Angeles, Calif.
AIRVAN—Steel. Firth Sterling Steel and Carbide Corp., McKeesport, Pa.
AISECO—Safety equipment. Burdett Oxygen Co., Cleveland, Ohio
AJAX—Hose. Hewitt-Robins, Inc., Stamford, Conn.
AJAX—Induction furnaces. Ajax Electrothermic Corp., Div. Ajax Metal Co., Ajax Park, Trenton, N. J.
AJAX—Electric arc welding machines. Railway Trackwork Company, Philadelphia, Pa.
AJAX-HULTGREN—Electric Salt Bath furnaces. Ajax Electric Co., Philadelphia, Pa.
AJAX-NORTHRUP—Induction heating equipment and electric induction furnaces. Ajax Electrothermic Corp., Trenton, N. J.
ALADDIN—Rod for welding zinc base metals & soldering or brazing aluminum. Aladdin Rod & Flux Mfg. Co., Grand Rapids, Mich.
ALBOX—Aluminum flux. Canadian Liquid Air Co., Ltd., Montreal, Que., Canada
ALCLEANER—Welding flux cleaner. Colonial Alloys Co., Philadelphia, Pa.
ALCOA—Aluminum alloys, welding and brazing rods, electrodes, welding and brazing fluxes, solder wire, castings, sheet, plate, tubing, etc. Aluminum Co. of America, Pittsburgh, Pa.
ALCOA I. G.—Aluminum welding wire for the Mig and Tig processes. Aluminum Co. of America, Pittsburgh, Pa.
ALFCO—Fire extinguishers. American LaFrance-Foamite Corp., Elmira, N. Y.
ALFCOSPRAY—Nozzles. American LaFrance-Foamite Corp., Elmira, N. Y.
ALFITE—Fire extinguishers and aircraft systems. American LaFrance-Foamite Corp., Elmira, N. Y.
ALFLEX—Flux coated electrodes. Canadian Liquid Air Co., Ltd., Montreal, Que., Canada
ALFRAX—Refractories. The Carborundum Co., Niagara Falls, N. Y.
ALJAY—Leather welder's clothing. Aljay Mfg. Co., Inc., Philadelphia, Pa.
AL-OX—Aluminum oxide papers and cloths. Clover Manufacturing Co., Norwalk, Conn.
ALOXITE—Coated abrasives. Carborundum Co., The, Niagara Falls, N. Y.
ALPHADIENE—Metal degreasing solvent. Colonial Alloys Co., Philadelphia, Pa.
ALL-PLASTIC—Plastic cover lens. Thermocote Co., Los Angeles, Calif.
ALL-PURPOSE—Handles. Martin Wells, Inc., Los Angeles, Calif.
ALL-REZ—Abrasives. Clover Mfg. Co., Norwalk, Conn.
All-STATE—Alloys, fluxes, solders, welding & brazing rods, electrodes, galvanizing powder, silver dispenser, etc. All-State Welding Alloys Co., Inc., White Plains, New York.
ALL-STATE UNIQUE WORK POSITIONER—Welding positioner. All-State Welding Alloys Co., Inc., White Plains, N. Y.
ALL-WEATHER—First aid kits. Mine Safety Appliances Co., Pittsburgh, Pa.
ALLEGHENY METAL—Stainless steels. Allegheny Ludlum Steel Corp., Pittsburgh, Pa.
ALLEN—A-C transformer type arc welders and combination spot and arc welders. Allen Electric and Equipment Co., Kalamazoo, Mich.
ALLEN—Brazing alloys and rings, wire scratch brushes, fluxes and compounds, solder. L. B. Allen Co., Chicago, Ill.
ALLISON—Arc welding electrode holder. Allison Tool and Engineering Co., Los Angeles, Calif.
ALLMAND—A. C. arc welders. Allmand Bros. Mfg. Co., Holdrege, Nebr.
ALLOY No. 1180—Copper-silver brazing alloy. Alloy Specialties Co., Swissvale, Pa.
ALLOY No. 1270—Copper-silver brazing alloy. Alloy Specialties Co., Swissvale, Pa.
ALLOY No. 1300—Copper brazing alloy. Alloy Specialties Co., Swissvale, Pa.
ALLOY ROD—Carbon molybdenum arc welding rod. Wilson Welder and Metals Co., Inc., New York, N. Y.
ALLOY RINGS—Preformed brazing alloys. Alloy Ring Silver, Inc., Indianapolis, Ind.
ALLSAFE—Welder's clothing, goggles, helmets and accessories. American Allsafe Co., Buffalo, N. Y.
ALL-WELD—All-position welding electrode. Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
ALNICO—Aluminum, nickel and iron alloy. Taylor-Wharton Iron and Steel Co., High Bridge, N. J.
ALOXITE—Bonded abrasives and coated abrasives. The Carborundum Co., Niagara Falls, N. Y.
ALPHATRON—Polonium static eliminator. Canadian Radium and Uranium Corp., New York, N. Y.
ALPHIL—Spot welder machines. Alphil Spot Welder Mfg. Co., Brooklyn, N. Y.
ALTEM—Flux and alloy coated gas welding rods. Canadian Liquid Air Co., Ltd., Montreal, Que., Canada
ALTERNEX—Coated arc welding electrode. Metal and Thermit Corp., New York, N. Y.
ALUBRO-WELD—Tinted protective welding lens. Willson Products, Inc., Reading, Pa.
ALUMAWELD—Aluminum solder and flux. Johnson Mfg. Co., Inc., Mount Vernon, Iowa.
ALUMEX—50-60, 70—Fire brick and kiln liners. Mexico Refractories Co., Mexico, Mo.
ALUMINOX—For cast aluminum welding rods and aluminum flux. Central Steel & Wire Co., Chicago, Ill.
ALUMINOX—Aluminum oxide wheels. American Emery Wheel Works, Providence, R. I.
A-LUM-ITE—Rod for brazing aluminum and welding white metals. United Welding Service Co., Franklin, Pa.
ALUMITE—Fire brick, refractory cement, preheating furnaces and refractories. The Massillon Refractories Co., Massillon, Ohio
ALUMINWELD—Aluminum welding electrode. Lincoln Electric Co., Cleveland, Ohio
ALUMNAR—Aluminum wire for Mig (metal inert-gas) welding and coated electrodes. Arcos Corp., Philadelphia, Pa.
ALUMSIL—Welding cast aluminum silicon rods. Chicago Hardware Foundry Co., North Chicago, Ill.
ALUNDUM ABRASIVES—Grinding wheels, refractories. Norton Co., Worcester, Mass.
ALUNDUM—Grinding wheels refractories, aluminum oxide. Norton Co., Worcester, Mass.
ALUTIN—Special solder for aluminum. Eutectic Welding Alloys Corp., Flushing, N. Y.
ALWAYS RELIABLE—Blow torches, firepots. Otto Bernz Co., Inc., Rochester, N. Y.
ALWELD—Oxygen, acetylene and medical trucks. Welded Truck & Specialty Co., Inc., Chicago, Ill.
ALZO-LITE—Floodlight. Benjamin Mfg. Co., Des Plaines, Ill.
A-MAL-GAM—Fluxes. Smith Welding Equipment Corporation, Minneapolis, Minn.
AMAZALOY—Steel hardening compound. All-State Welding Alloys Co., Inc., White Plains, N. Y.
AMBRALOY—Copper aluminum alloys. American Brass Co., Waterbury, Conn.
AMCO—Soldering, brazing and welding fluxes, aluminum solder, tinning and galvanizing compounds. American Solder & Flux Co., Philadelphia, Pa.
AMCOHOOD—Welding helmets. Eastern Equipment Corp., Willow Grove, Pa.
AMCO-GOGGLE—Goggles, welders and chippers. Eastern Equipment Corp., Willow Grove, Pa.
AMCOROD—Oxy-Acetylene welding rods. Eastern Equipment Corp., Willow Grove, Pa.
AMCOWELD—Oxy-acetylene and arc welding accessories, safety equipment and clothing. Eastern Equipment Corp., Willow Grove, Pa.
AMERCLAD—Electrical cables. American Steel and Wire Co., Cleveland, Ohio
AMERCLAD—Wire cables. Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
AMERCUT—Cold Gold finished bars. American Steel & Wire Co., Cleveland, Ohio
AMERICAN—Calcium carbide. American Carbide & Chemical Corp., St. Louis, Mo.
AMERICAN—Flexible metal hose and tubing. American Oxygen Service Corp., Harrison, N. J.
AMERICAN—Hoist, electric. American Hoist & Derrick Co., St. Paul, Minn.
AMERICAN—Chain. American Chain Div., American Chain & Cable Co., Inc., York, Pa.
AMERICAN—Hose, clamps. American Stamping Co., Battle Creek, Mich.
AMERICAN—Vises, cutters, benders, pipe reamers and die stock sets. American Pipe Tool Co., Chicago, Ill.
AMERICAN—Spot welders. Sterling Utilities Co., Inc., Brooklyn, N. Y.
AMERICAN—Flexible metal hose and tubing. The American Brass Co., American Metal Hose Branch, Waterbury, Conn.
AMERICAN—Electrical Wire & Cables. American Steel & Wire Co., Cleveland, Ohio
AMERROD—Oxy-acetylene rods, bars and flux coated electrodes. Eastern Equipment Corp., Willow Grove, Pa.
AMERTRAN—Electric transformers. American Transformers Co., Newark, N. J.
AMER-WELD—Electric spot welding machines. American Transformer Co., Newark, N. J.
AMESWELD—Resistance welding equipment. Ames Spot Welder Co., Brooklyn, N. Y.
A-MOL—Hand hack blades. E. C. Atkins & Co., Indianapolis, Ind.
AMP—Solderless wiring devices. Aircraft-Marine Prod. Co., Harrisburg, Pa.
AMPCO METAL—Aluminum bronze alloy. Ampco Metal, Inc., Milwaukee, Wis.
AMPCOLOY—Copper base alloys. Ampco Metal, Inc., Milwaukee, Wis.
AMPCO-TRODE—Coated aluminum bronze welding electrodes. Ampco Metal, Inc., Milwaukee, Wis.
AMPCO—WELD—Resistance welding electrodes and accessories. Ampco Metal Inc., Milwaukee, Wis.
AMPCO-WELL—Aluminum-bronze flux. Ampco Metals, Inc., Milwaukee, Wis.
AMPERE—Canvas stitched belting. Victor Balata & Textile Belting Co., New York, N. Y.
AMPLI-PRESS—Terminals, connectors and crimping tools. Aircraft-Marine Prod. Co., Harrisburg, Pa.
AMPOWER—Portable spot welder. Ampower Prod. Co., Oak Lawn, Ill.
AMSCO—General product line, including all welding rods. American Manganese Steel Div. American Brake Shoe Co., Chicago Heights, Ill.
AMWEL—Welding and brazing fluxes and rods. Metal cleaners and compounds, brazing alloy rings, brazing soldering and welding alloys, aluminum and metallizing wire. American Welding Alloys Corp., Brooklyn, N. Y.
AMWIRE—Amer. Welding Alloy, Inc., Brooklyn, N. Y.
ANACONDA—Brass products and copper and copper alloy welding rods. American Brass Co., Waterbury, Conn.
ANDCO—Andco, Inc., Orchard Park, N. Y.
ANDERSON—Carbon arc torch. Albert & J. M. Anderson Mfg. Co., Boston, Mass.
ANDERSON—Wire wheel brushes & hand scratch brushes. Anderson Corp., Worcester, Mass.
ANDREX—Lightweight Portable x-ray machines. Andreason, Holger, Inc., San Francisco, Calif.
ANNITE—Alloy welding rod. Bisset Steel Co., Cleveland, Ohio
ANODE—Welding electrode for use on cast iron. Lincoln Electric Co., Cleveland, Ohio
ANSUL—Fire extinguishers and chemicals. Ansul Chemical Co., Marinette, Wis.
ANTI—BORAX—Welding & brazing fluxes. Anti-Borax Compound Co., Fort Wayne, Ind.
ANTI-FOG—Compound for safety goggles lens to keep them from fogging. American Optical Co., Southbridge, Mass.
ANTI-FOG "COMP. MCG."—Compounds, anti-fog, lens cleaner. Merix Chemical Co., Chicago, Ill.
ANTI-SPATTER—Spatter preventative. Wolfe-Kote Co., Inc., Sheboygan, Wis.
ANTIGLARE—Lenses. Chicago Eye Shield Co., Chicago, Ill.
APPLETON—Plugs and receptacles, connectors, pay-out and take-up reels. Appleton Electric Co., Chicago, Ill.
AQUA SOL—Water soluble grinding compound. Wayne Chemical Products Co., Detroit, Mich.
AQUAMAG—Magnesium oxide filler in welding rod coatings. Foote Mineral Co., Philadelphia, Pa.
AQUIFLUX—Soldering flux. Special Chemicals Co., New York, N. Y.
ARC-BAN—Bausch & Lomb Optical Co., Rochester, N. Y.
ARC MASTER—Electrode holders. Wagner Manufacturing Co., Inc., Jackson, Mo.
ARC POSITIONER—Adjustable mount for automatic welding heads. Mark F. Gouran, Philadelphia, Pa.
ARC RITE—A.C. arc welder. Mellaphone Corp., Rochester, N. Y.
ARC TIME TOTALIZER—Instrument recording. Hewlett-Packard Co., Palo Alto, Calif.
ARCAIR—Arc gouging equipment and electrodes. Arcair Co., Bremerton, Wash.
ARCALOY—Stainless steel and heat resisting electrodes. Alloy Rods Co., York, Pa.
ARCAST—Electrode cast iron. American Arc Welders, Inc., Roseau, Minn.

ARC-BAN—Welding goggles. Bausch & Lomb Optical Co., Rochester, N. Y.
ARC-BAN—Welding plates for arc welding helmets. Kimball Safety Products Co., Cleveland, Ohio
ARC-CRAFT ELECTRODES — Electrodes. Allied Weld-Craft, Inc., Indianapolis, Ind.
ARC-FIT—Tube and pipe notching tools. Vogel Tool & Die Corp., Chicago, Ill.
ARC-FLEX — Cable. Arc Welding Supply Co., Bronx, N. Y.
ARCBRONZ—Coated phosphor bronze electrode for welding bronze, brass and copper. Hobart Bros. Co., Troy, Ohio.
ARCMASTER—High frequency unit for attachment to any type of A-C arc welder. Welding Apparatus Co., Chicago, Ill.
ARCOSITE—Flux. Arcos Corp., Philadelphia, Pa.
ARCOS—Special alloy electrodes. Arcos Corp., Philadelphia, Pa.
ARCO-WAND—Flux recovery unit. American Vacuum Co., Chicago, Ill.
ARCRONOGRAPH—Graphic instrument for recording uniformity of arc stream. Rubicon Company, Philadelphia, Pa.
ARCTROL—Foot operated arc control. Mullenbach Electrical Mfg. Co., Los Angeles, Calif.
ARC-WELD—Electrodes. Arc Welding Supply Co., Bronx, N. Y.
ARMALOY—Alloy steel wrenches, socket and drive parts wrenches. Armstrong Bros. Tool Co., Chicago, Ill.
ARMCO—Steel sheets, (carbon), stainless steel sheets, strip, bar, wire. Tubing, mechanical welded, cold-rolled, zinc control, aluminum coated, Armco Steel Corp., Middletown, Ohio
ARMGLO—Resistance welders, automatic timers for resistance welders and resistance welding electrodes. Armglo Co., Milwaukee, Wis.
ARMITE—Hard facing material and welding rods. Armite Laboratories, Los Angeles, Calif.
ARMITE-ELD—Hard-facing rods, water course and mudgun nozzle. Armite Laboratories, Los Angeles, Calif.
ARMORARC—Armor welding electrodes. Alloy Rods Co., York, Pa.
ARMORIZE—Electrodes. Crucible Steel Co. of America, New York, N. Y.
ARMOR-TUF—Hardening compound. Armor-Tuf Sales Corp., New York, N. Y.
ARMSTRONG—"C" Clamps and machinists vises. Armstrong Bros. Tool Co., Chicago, Ill.
ARMSTRONG—Pipe cutter wheels, etc. Collmer Bros., South Bend, Ind.
ARMSTRONG — Fire bricks, refractory cement. Armstrong Cork Co., Lancaster, Pa.
ARMSTRONG BRIDGEPORT—Pipe tools. Capewell Mfg. Co., Hartford, Conn.
ARMSTRONG BROS.—Pipe vises; chain pipe vises; dies, bolt, stocks and dies, bolt. Armstrong Bros. Tool Co., Chicago, Ill.
ARO—Lubrication equipment, pneumatic tools and aircraft parts. The Aro Equipment Corp., Bryan, Ohio.
ARO—Portable spot welders. Aro Spot Welders, Inc., New York, N. Y.
ARONSON—TWINNER—Magnetic welding clamps. Aronson Machine Co., Arcade, N. Y.
ARROW-BLAST—Abrasive for sand blasting. Norton Co., Worcester, Mass.
ASBESTOS FIREMAN—Safety clothing. Wheeler Protective Apparel, Inc., Chicago, Ill.
ASCO—Acetylene. Acetylene Service Co., Denver, Colo.
ASHCROFT—Indicating and recording pressure gauges. Manning, Maxwell & Moore, Inc., Bridgeport, Conn.
ATCO—Cast iron welding rods. Atlas Foundry Co., Cleveland, Ohio.
ATCO ALLOY No. 7—Cast iron rods for high pressure welding. Atlas Foundry Co., Cleveland, Ohio.
ATCO MOLY-NICKEL—Cast iron alloy welding rods. Atlas Foundry Co., Cleveland, Ohio.
ATCOTRAN—Electrical measurement system. Automatic Temperature Control Co., Inc., Philadelphia, Pa.
ATCOTRONIC—Timers-Contactors. Automatic Temperature Control Co., Inc., Philadelphia, Pa.
ATLAS—Electric arc welder. Precision Welder Mfg. Co., Chicago, Ill.
ATLAS—Cast iron welding flux. Air Reduction Sales Co., New York, N. Y.
ATLAS—Weld cleaning tools, cleaning brushes, dual-case & tools; marking hammers and hand stamps. Atlas Welding Accessories Co., Ferndale, Mich.
ATLAS—Torch lighters and flints. Flint Products Co., Brooklyn, N. Y.
ATOM-ARC—Iron-powder, low-hydrogen electrode. Alloy Rods Co., York, Pa.
ATOMIC—Insulated electric holders. Welding Engineering Corp., Milwaukee, Wis.
ATOMIC—A. C. welders. Will-Weld Mfg. Co., Inc., Omaha, Neb.
ATRAX—Rotary files. The Atrax Co., Newington, Conn.
AUDUBON—Wire cloth. Manganese Steel Forge Co., Philadelphia, Pa.
AUFHAUSER—Machinery used in production of welding electrodes. Aufhauser Bros., Co., New York, N. Y.
AUTO-ARC—Welding head and automatic welding wire. Auto Arc Weld Mfg. Co., Cleveland, Ohio.
AUTOCHEMIC—Fluxes. Eutectic Welding Alloys Corp., Flushing, N. Y.
AUTOGENIZER—Compound. Lincoln Electric Co., Cleveland, Ohio.
AUTO-BLOC—Chain hoists. David Round & Son, Cleveland, Ohio.
AUTO-LITE—Dials, indicating and recording thermometers and recording gauges. Instrument Div., Electric Auto-Lite Co., Toledo, Ohio.
AUTOMAT—Welding torch. Modern Engineering Co., Inc., St. Louis, Mo.
AUTOMATIC—Welding torches. The Harris Calorific Co., Cleveland, Ohio.
AUTO-WELD-MATONS—
AVIATOR—Welding torch. Modern Engineering Co., Inc., St. Louis, Mo.
AVIATOR JET—Welding & cutting torches and outfits. Modern Engineering Co., Inc., St. Louis, Mo.
AXIVANE—Fans. Joy Mfg. Co., Pittsburgh, Pa.
AZTEX—Fire Brick. Mexico Refractories Co., Mexico, Mo.

B

B&B—Safety slings. Broderick & Bascom Rope Co., St. Louis, Mo.
B&H—Welder's gloves, leather jackets, cape sleeves, overalls and pants and other accessories for welders and flame cutting operators. B&H Welders' Supplies, Portsmouth, Va.
B&W—Straight-edge held in place by magnets. B&W Co., Los Angeles, Calif.
BBB—Carbon electrodes, carbon plates and paste, copper coated cored carbon electrodes, carbon brush sets. Becker Bros. Carbon Co., Cicero, Ill.
BH—Dual-spot welder. Hirst Electronic Development Ltd., London, Eng.
BMC—Pressure lock wrench, adjustable. BMC Mfg. Corp., Binghamton, N. Y.
BN—Metal cleaners. Wyandotte Chemical Corp., Wyandotte, Mich.
BR—Hardfacing rod. Mir-O-Col Alloy Co., Los Angeles, Calif.
BZ—Grinding wheel. Bay State Abrasive Products Co., Westboro, Mass.
BABY GEORGE—Cecil B. Peck Co., Cleveland, Ohio.
BADGER—Permanent air filters. Badger Corp., Milwaukee, Wis.
BAFFLE CRETE—For monolithic baffle construction. Mexico Refractories Co., Mexico, Mo.
BAHCO—Pipecutters, forges, hand power hoists, ladles, pipe bending machines, metalcutting shear-machines and pipe vises. Sandvik Saw & Tool, New York, N. Y.
BAL-GUARD—Bausch & Lomb Optical Co., Rochester, N. Y.
BAL-SAFE—Bausch & Lomb Optical Co., Rochester, N. Y.
BAL-SPEC—Bausch & Lomb Optical Co., Rochester, N. Y.
BALBACH—Dry oxygen and acetylene. The Balbach Co., Omaha, Neb.
BALDOR—Grinders & motors, bench and pedestal. Baldor Electric Co., St. Louis, Mo.
BALDWIN—Roller chains. Chain Belt Co. Milwaukee, Wis.
BALL-GRIP—Electrode holder. McClary & Byers Equipment Co., Oakland, Calif.
BALTOGRAPH—Portable X-ray unit. Balteau Electric Corp., Stamford, Conn.
BANNER—Resistance welders. Banner Manufacturing Co., Milwaukee, Wis.
BANNER—Welding compound. Cortland Welding Compound Co., Cortland, N. Y.
BANTAM BULLY—Pneumatic chipping and peening hammer. Superior Mfg. Co., Div., Bingham Herbrand Corp., Cleveland, Ohio.
BANTAM BULLY FULFLO FILTER—Filters. Superior Mfg. Co., Div., Bingham Herbrand Corp., Cleveland, Ohio.
BANTAM CHAMP—D.C. Arc Welder, Electric Drive or Generator only. Hobart Bros. Co., Troy, Ohio.
BARGER—Dust collector. Ralph Maitland, Cleveland, Ohio.
BAR-LOK—Pressure units. Mechanics Engineering Co., Jackson, Mich.
BARNES—Pipe cutter wheels, etc. Collmer Bros., South Bend, Ind.
BARRET—Jacks. Duff Norton Mfg. Co., Pittsburgh, Pa.
BARTLETT COMPOUND LEVER — Metal cutting shears. Bartlett Manufacturing Co., Detroit, Mich.
BASA—Machinist hammers. Greene, Tweed & Co., North Wales, Pa.
BASAR—Anti-rust compound. Bay State Abrasive Products Co., Westboro, Mass.
BASCO—Welders' clothing, gloves and protective garments. Boston Athletic Shoe Company, Cambridge, Mass.
BASCO-TEX—Flameproof duck and neoprene and plastic aprons. Associated Bag & Apron Co., Chicago, Ill.
BAYFLEX—Abrasive disc-wheels. Bay State Abrasive Prod. Co., Westboro, Mass.
BAY STATE—Grinding wheels, lapping stones, polishing wheels and abrasive bricks. Bay State Abrasive Products Co., Westboro, Mass.
BEAM-HUGGER—Trolley hoist. David Round & Son, Cleveland, Ohio.
BEAMOGRAPH—Flame cutting machine. Air Reduction Sales Co., New York, N. Y.
BEARCAT—Electric hoists. The Harrington Co., Phila., Pa.
BEAVER—Pipe and bolt threading tools and machines. Beaver Pipe Tools, Inc., Warren, Ohio.
BEAVER—Portable flame-cutting machine. The Burdett Oxygen Co., Cleveland, Ohio
BECKER BROS.—Replacement carbon brushes. Becker Bros. Carbon Co., Cicero, Ill.
BEFCO—Cast iron, cast aluminum and cast manganese bronze welding rods. Bierman-Everett Foundry Co., Irvington, N. J.
BELCO—Chemicals and equipment. Bogue Electric Mfg. Co., Paterson, N. J.
BELCON—Selenium rectifiers. Bogue Electric Mfg. Co., Paterson, N. J.
BELDEN—Welding cable and power supply cable. Belden Mfg. Co., Chicago, Ill.
BELL TOP—Torch lighters and flints. Flint Products Co., Brooklyn, N. Y.
BELMONT—Metals. Belmont Smelting & Refining Works, Inc., Brooklyn, N. Y.
BELMONT—Sand blasting and wet blasting equipment. Vacu-Blast Co., Inc., Belmont, Calif.
BEN-NEK—Electric holder. Ben-Nek Holder, Inc., Branford, Conn.
BERGER—Steel work benches and lockers. Berger Mfg. Div. of Republic Steel Corp., Canton, Ohio.
BERG SHARK BRAND—Chisels, bolt and wire cutters, pliers and hand punches and vises. Sandvik Saw & Tool, New York, N. Y.
BERGSTROM CASTALOY—Alloy tooth repointer. Industrial Overlay Metals Inc., Eaton, Ohio
BERGSTROM GROUSER STRIP—Strip for cat pads. Industrial Overlay Metals Inc., Eaton, Ohio
BERKELEY—Continuous longitudinal seam welder. Penn Tool & Machine Co., Danville, Ill.
BERNARD-ARC—Slag-gas shielded welding process. Bernard Welding Equipment Co., Chicago, Ill.
BERYLCO—Electrodes. Beryllium Corp., Reading, Pa.
BERYL-TRODE—Copper-base alloy electrode. Ampco Metals, Inc., Milwaukee, Wis.
BESCO—Spot welder. Tweezer Weld Corp., Newark, N. J.
BESLY—Taps, drills, reamers and end mills. Besly-Welles Corp., Beloit, Wis.
BESLY TITAN—Abrasive wheels, discs. Besly-Welles Corp., Beloit, Wis.
BEST—Water hardening tool steel. Henry Disston & Sons, Inc., Philadelphia, Pa.
BEST EFFECT—Rust and stain removers for metals. Best Effect Chemical Co., Hackensack, N. J.
BEST YET—Coated cover lens and plates. Sellstrom Mfg. Co., Chicago, Ill.
BETA FLUX—Electrode coating material. Foote Mineral Co., Inc., Philadelphia, Pa.
BETTERWELD—Cast iron welding flux. Victor Equipment Co., San Francisco, Calif.
BIG AMP—Cable connectors. Plastal Manufacturing Co., Pasadena, Calif.
BIG BERTHA—Preheating torch. L. B. White Co., Onalaska, Wis.
BIG BRUTE—Welding ground clamp. Mueller Electric Co., Cleveland, Ohio.
BIG BULLY—Pneumatic hammer. Superior Mfg. Co., Div., Bingham Herbrand Corp., Cleveland, Ohio.
BIG CHIEF—Heavy-duty pedestal. Cayuga Machine & Fabricating Co., Inc., Depew, Buffalo, N. Y.
BIG CHIEF—Steel tape rule. Carlson & Sullivan, Inc., Monrovia, Calif.
BIG GEORGE—Welding Fixture. Cecil C. Peck Co., Cleveland, Ohio.
BIG THREE—Oxy-acetylene and electric arc welding equipment, welding rods, electrodes, and accessories, and oxygen and acetylene. Big Three Welding Equipment Co., Fort Worth, Texas.
BILLINGS—Wrenches. The Billings & Spencer Co., Hartford, Conn.
BINGHAMTON—Flexible shaft machines. Binghamton Flexible Shaft Div., Swartz & White Mfg. Co., Binghamton, N. Y.
BINGO—Soldering & Brazing tips. Beaverdell Co., Phoenix, Arizona
BINGROD—Welding rod. Bingrod Co., Kalamazoo, Mich.
BIRDSELL PRODUCTS—A.C. arc and spot welders; carbon arc torches. Birdsell Manufacturing Co., Los Altos, Calif.
BISCO—Electric-arc welding rods. Bissett Steel Co., Cleveland, Ohio.
BLACK & DECKER—Portable electric tools. Black & Decker Mfg. Co., Towson, Md.
BLACK DEVIL—Welding electrodes. The Champion Rivet Co., Cleveland, Ohio.
BLACK MAGIC—Hard-facing flux. Universal Welder Corp., Cleveland, Ohio.
BLACKSMITH & GARAGE—Floor grinder. Clizbe Bros., Plymouth, Ind.
BLACK PANTHER—Twist drills. Cogsdill Twist Drill Co., Detroit, Mich.
BLANC—Liquid solder paste. Farrelloy Co., Phila., Pa.
BLASTFOE—Sand blasting helmets and masks. Mine Safety Appliance Co., Pittsburgh, Pa.
BLASTITE—Burner Igniters. Eclipse Fuel Eng. Co., Rockford, Ill.
BLAZECRETE—Castable refractories. Johns-Manville, New York, N. Y.
BLINKER HELMET—Arc welding helmets. Welding Apparatus Co., Chicago, Ill.
BLU-MOL—Hole saws and hand and power hack saw blades. Millers Falls Co., Greenfield, Mass.
BLUE BOY—Differential hoist. Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
BLUE BRUTE—Portable air compressor. Worthington Pump & Machinery Corp., Harrison, N. J.

BLUE CENTER STEEL—Wire rope. John A. Roebling's Sons Co., Trenton, N. J.
BLUE CHIP—High speed steel. Firth-Sterling Steel and Carbide Corp., McKeesport, Pa.
BLUEDAC—Mild steel electrode. Champion Rivet Co., Cleveland, Ohio.
BLUE DEVIL—Mild steel electrodes. The Champion Rivet Co., Cleveland, Ohio.
BLUE DEVIL 85—Low alloy electrodes. The Champion Rivet Co., Cleveland, Ohio.
BLUE END—Wood folding rule. Master Rule Mfg. Co., Middletown, N. Y.
BLUE FLASH—Torches and regulators. Arc Welding Supply Co., Bronx, N. Y.
BLUE NOSE—File, handles. American Stamping Co., Battle Creek, Mich.
BLUE ROD No. 40—Cast iron welding electrodes. Marquette Mfg. Co., Minneapolis, Minn.
BLUE STAR—Knives. E. C. Atkins & Co., Indianapolis, Ind.
BLUE STRIPE—Silicon carbide papers and cloths. Clover Manufacturing Co., Norwalk, Conn.
BLUE TIP—Wood folding rule. Master Rule Mfg. Co., Middletown, N. Y.
BLUE TIP—Bronze welding rods. Mueller Brass Co., Port Huron, Mich.
BLUEDAC—Heavy, flux coated electrodes. The Champion Rivet Co., Cleveland, Ohio.
BLUKOTE—A coated electrode. Central Steel and Wire Co., Chicago, Ill.
BLUWELD LO-HYDROGEN ELECTRODE STABILIZER—Electrode drying oven. Fred C. Archer, Inc., Milwaukee, Wis.
BODY-GUARD—Welding helmets and gloves. Burdett Oxygen Co., Cleveland, Ohio.
BOGUE—Electrical equipment. Bogue Electrical Equipment Co., Paterson, N. J.
BOKERWELD—Stainless steel and special alloy arc welding electrodes. H. Boker & Co., Inc., New York, N. Y.
BONALOY—Hand tools. Bonney Forge & Tool Works, Allentown, Pa.
BOND ROD—Ground clamp. H. B. Sherman Mfg. Co., Battle Creek, Mich.
BONNEY—Drop forged welding flanges. Bonney Forge and Tool Works, Allentown, Pa.
BORAX-ETTE—Flux for forge welding. Cortland Welding Compound Co., Cortland, N. Y.
BORCOTE—Organic filler for welding. Foote Mineral Co., Philadelphia, Pa.
BORIUM—Tungsten carbide inserts and sand blast nozzles. Stoody Co., Whittier, Calif.
BOROD—Hard facing rods and electrodes. Stoody Co., Whittier, Calif.
BOROLON—Grinding wheels. Simonds Abrasive Co., Philadelphia, Pa.
BOWERS—Welding helmets. Fibre-Metal Products Co. Chester, Pa.
BRAKE SHOE—Paint spray equipment. Kellogg Div. of American Brake Shoe Co., Rochester, N. Y.
BRASSWELD—Powdered brass flux for brazing steel, malleable iron and brass. Sight Feed Generator Co., West Alexanderia, Ohio.
BRAZ-CAST—Flux for bronze welding. Anti-Borax Compound Co., Fort Wayne, Ind.
BRAZE—CLAD—Silver brazing alloy clad metals. Sherman & Co., (American Silver Co.), Flushing, N. Y.
BRAZ-WELD—Self fluxing brazing rods. Krembs & Co., Chicago, Ill.
BRAZALL—Flux. F. R. Faulk Equip. Sales, Pittsburgh, Pa.
BRAZALOY—Welding and brazing alloys and fluxes. All-State Welding Alloys Co., Inc., White Plains, N. Y.
BRAZARC—Coated bronze arc welding electrode. Universal Welding Corp., Cleveland, Ohio.
BRAZEWELD—Brazing electrode. Lincoln Electric Co., Cleveland, Ohio.
BRAZEWELL—Flux used for bronze welding. Canadian Liquid Air Co., Ltd., Montreal, Que., Canada.
BRAZO FLUX—Flux for bronze-welding and brazing. The Linde Air Products Co., Unit of Union Carbide and Carbon Corp., New York, N. Y.
BRAZOX—Soft brass brazing wire. Central Steel & Wire Co., Chicago, Ill
BREN/WELD—Portable arc welder. Kasson Die & Motor Corp., Long Island City, N. Y.
BRIDGEPORT—Bronze welding alloys. Bridgeport Brass Co., Bridgeport, Conn.
BRIDGEPORT—Chains. Bridgeport Chain & Mfg. Co., The, Bridgeport, Conn.
BRIGGS—Air operated, portable, automatic spot-welder. Briggs Mfg. Co., Detroit, Mich.
BRIGHT 110G—High carbon steel welding rod. Central Steel and Wire Co., Chicago, Ill.
BRIGHT BOY—Rubber abrasives, metal cleaners and polishers. Weldon Roberts Rubber Co., Newark, N. J.
BRISTOL'S—Time recorders, pyrometers and recording instruments. Bristol Co., Waterbury, Conn.
BRITEBLADE—Steel tape rule. Master Rule Mfg. Co., Middletown, N. Y.
BROMITE—Aircraft systems. American-La-France-Foamite Corp., Elmira, N. Y.
BRONCO 60 CERTIFIED—Welding cables. Western Insulated Wire Co., Los Angeles, Calif.
BRONZ-ARC—Bronze electrode. American Arc Welders, Inc., Roseau, Minn.
BRONZE-ARC—Bronze and copper electrodes. Alloy Rods Co., York, Pa.
BRONZE—ARC MN—Manganese bronze electrodes. Alloy Rods Co., York, Pa.
BRONZE DEVIL—Bronze electrode. Champion Rivet Co., Cleveland, Ohio.
BRONZE-ROD No. 61—Bronze welding electrode. Marquette Mfg. Co., Minneapolis, Minn.
BRONZEND—Bronze-alloy electrodes. Arcos Corp., Philadelphia, Pa.
BRONZEWELD—Brazing fluxes for cast iron and steel. Alfco Labs, Chicago, Ill.
BRONZEWELD—Powdered bronze flux for brazing bronze, cast iron and steel. Sight Feed Generator Co., West Alexandria, Ohio.
BRONZKOTE—Flux coated bronze rod. Central Steel and Wire Co., Chicago, Ill.
BRONZOCHROM—Hard facing materials. Eutectic Welding Alloys Corp., Flushing, N. Y.
BRONZOLATEM—Low fuming brazing rods. Permalatem Welding Alloys Co., Red Bank, N. J.
BRONZOX M—Bronze gas welding rod. Central Steel & Wire Co., Chicago, Ill.
BROWN—Chains. Bridgeport Chain Mfg. Co., The, Bridgeport, Conn.
BROWNIE—Steel tape rule. Master Rule Mfg. Co., Middletown, N. Y.
BRUNNER—Air compressors and refrigeration units. Brunner Mfg. Co., Utica, N. Y.
BRYANT—Impact hammer. Bryant Products Distributing Co., Jackson, Mich.
BUCKEYE—Coil chain. The Cleveland Chain & Mfg. Co., Cleveland, Ohio.
BUCKEYE—Portable air tools, portable electric tools, (hi-frequency only). Buckeye Tools Corp., Dayton, Ohio.
BUDA—Diesel-Electric and gasoline-electric generator sets. The Buda Co., Harvey, Ill.
BUDDY—Steel tape rule. Carlson & Sullivan, Inc., Monrovia, Calif.
BUDGIT—Electric hoists, chain blocks, cord reels, trolleys and crane assemblies. Manning, Maxwell & Moore, Inc., Muskegon, Mich.
BUFFALO—Fans, benders, shears, blowers, collectors, exhausters and bending rolls. Buffalo Forge Co., Buffalo, N. Y.
BUFFALO—Fire extinguishers, rechargers and fire alarms. Buffalo Fire Appliance Corp., Dayton, Ohio.
BULL DOG—Marking machine. Acromark Co., Elizabeth, N. J.
BULL DOG—Welding hose. Boston Woven Hose & Rubber Co., Cambridge, Mass.
BULL DOG—Metal electrode holder. Welding Engineering Corp., Milwaukee, Wis.
BULLDOG — Toolholders. Vascoloy-Ramet Corp., Waukegan, Ill.
BULLDOG—Tractor grip-lugs, repointer bars, grouser bolts and nuts, applicator bars, etc. Allied Tractor & Steel Prod. Corp., Cleveland, Ohio.
BULLARD—Respirator. E. D. Bullard Co., San Francisco, Calif.
BULLS-EYE—Welding gloves and protective clothing. Universal Leather Co., Berlin, Wis.
BULLY BLOW GUN—Blow gun. Superior Mfg. Co., Div., Bingham Herbrand Corp., Cleveland, Ohio.
BUMBLE BEE—A-C welder. Air Reduction Sales Co., New York, N. Y.
BUNELL—Special tools, dies, jigs, fixtures and special machines. Bunell Machine & Tool Co., Cleveland, Ohio.
BUNDYWELD—Steel tubing, monel tubing, and nickel tubing. Bundy Co., Detroit, Mich.
BURDOX — Goggles. Burdett Oxygen Company, Cleveland, Ohio.
BURNERS' AID—Arcair Co., Lancaster, Ohio.
BURRO—Locomotive crane. Cullen-Friestadt Co., Chicago, Ill.
BURT-WELD—Welding lens. B. F. McDonald Co., Los Angeles, Calif.
BUSYBEE—A-c arc welder. Air Reduction Sales Co., New York, N. Y.
BUTT ON SPOT—Butt welding attachment. Robert W. Hoffman Co., Inc., Chicago, Ill.

C

C-5—Cutting torch. Harris Calorific Co., Cleveland, Ohio.
C-30—Hard surfacing electrode. The Champion Rivet Co., Cleveland, Ohio.
CCC METAL—Welding tips for spot welding machines. American Electric Fusion Corp., Chicago, Ill.
CCOCO—Oxygen and acetylene gases compressed in cylinders. Corpus Christi Oxygen Co., Corpus Christi, Texas.
CEE—Aluminum "C" clamps. Foster Alum. Alloy Prod. Corp., Forestville, N. Y.
C-F—Welding positioners and sheet lifters, Cullen-Friestadt Co., Chicago, Ill.
C-H—Magnetic and electronic timers, contactors and accessories. Cutler-Hammer, Inc., Milwaukee, Wis.
C-L—Chipping and slag removal hammers, and first aid kits. Carter-Lockard Co., Los Angeles, Calif.
C&L—Blow torch and air pots. Clayton & Lambert Mfg. Co., Louisville, Ky.
CM—Ratchet lever hoist and cranes. Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
CM—Fire retardant. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
CM-50—Alloy electrode. Harnischfeger Corp., Milwaukee, Wis.
CMD—Chipping hammers. Chicago Mfrs. & Distributing Co., Chicago, Ill.
CMD TEXTITE—Air separators, (filters). Chicago Mfg. & Distributing Co., Chicago, Ill.
CP—Pneumatic tools, weld flux chippers, scaling tools, hose couplings and files. Chicago Pneumatic Tool Co., New York, N. Y.
CR—Air control valve. Eclipse Fuel Engineering Co., Rockford, Ill.
CS—Nickel and copper welding electrode. Tennessee Fabricating Co., Memphis, Tenn.
CY—Constant voltage D-C welder. Hobart Bros. Co., Troy, Ohio.
CABLE KING—Wire rope, electric hoist. The Yale & Towne Mfg. Co., Philadelphia, Pa.
CABLE-TITE—Cable connectors. National Cylinder Gas Co., Chicago, Ill.
CADDY—Arc welding accessories. Erico Products, Inc., Cleveland, Ohio.
CADDY CUB—Electrode holder. Erico Products, Inc., Cleveland, Ohio.
CADET—Cutting flame machines and tips. American Pulimax Co., Inc., Chicago, Ill.
CADWELD—Electrical Connections. Erico Products Inc., Cleveland, Ohio.
CALDER—Grinding wheel, dressers and cutters. Calder Mfg. Co., Lancaster, Pa.
CALOBAR—Filter glass plates and lenses. American Optical Co., Southbridge, Mass.
CAM-LOK—Cable connectors and lugs and electrode holders. Cam-Lok Div., Empire Prod. Inc., Cincinnati, Ohio.
CAMOGRAPH—Oxy-acetylene cutting machine. Air Reduction Sales Co., New York, N. Y.
CAMPBELL—Abrasive cutting machines. Campbell Machine Div. of American Chain & Cable Co., Inc., Bridgeport, Conn.
CAMPBELL—Chain. International Chain & Mfg. Co., York, Pa.
CANADIAN—Calcium carbide. Shawinigan Products Corporation, New York, N. Y.
CANALLOY—Hardfacing electrodes and welding rods. Canton Alloys, Inc., Canton, Ohio.
CANDEE-SMITH—Governors for gas engine driven electric welders. Candee's Machine Shop, Los Angeles, Calif.
CANDOR—Gloves. Candor Glove Co., Candor, N. Y.
CAN'T BEAT EM—Tool handles. O. P. Link Handle Co., Salem, Ind.
CAPUTO-CRAWFORD—Kinetic stored energy system for resistance welding. Progressive Welder Co., Detroit, Mich.
CARBIC—Calcium carbide and floodlights. The Linde Air Products Co., Unit of Union Carbide and Carbon Corp., New York, N. Y.
CARBIDE—Shawinigan Prods. Corp., New York, N. Y.
CARBO—Oxygen, carbo-hydrogen, welding and cutting equipment, welding supplies and accessories. National Cylinder Gas Co., Chicago, Ill.
CARBO—Baked carbons. Hobart Brothers Co., Troy, Ohio.
CARBOFLEX—Grinding wheels. The Carborundum Co., Niagara Falls, N. Y.
CARBOFRAX—Refractories. The Carborundum Co., Niagara Falls, N. Y.
CARBO-HYDROGEN—Fuel gas for welding and cutting. National Cylinder Gas Co., Chicago, Ill.
CARBOLITE—Calcium carbide. The Linde Air Products Co., Unit of Union Carbide & Carbon Corp., New York, N. Y.
CARBOLITE—Silicon carbide wheels. American Emery Wheel Works, Providence, R. I.
CARBOLOY CEMENTED CARBIDES—Metal cutting tools, woodworking tools, masonry drills, wire drawing dies. Carboloy Dept., General Electric Co., Detroit, Mich.
CARBON-MOLY 50—Electrode. Metal & Thermit Corp., New York, N. Y.
CARBON PUTTY—Carbon compound. Smith Welding Equipment Corporation, Minneapolis, Minn.
CARBORA—Grinding wheels and abrasive products. Cortland Grinding Wheels Corp., Chester, Mass.
CARBORUNDUM—Bonded abrasives and coated abrasives. The Carborundum Co., Niagara Falls, N. Y.
CARBURS—Carbide Rotary Files. Lincoln Park Inc., Lincoln, Mich.
CAREND—A-C welding electrode. Arcos Corp., Philadelphia, Pa.
CARHOFF—Electrode holder. Carhoff Co., Cleveland, Ohio.
CARILLOY (USS)—Alloy steels. Carnegie-Illinois Steel Corp., Pittsburgh, Pa.
CAROLUS—Bolt, rod and wire cutters. Manco Mfg. Co., Bradley, Ill.
CARPENTER—Stainless steel bars, strip, drill rod, welded tubing, welding rods, tool steel, alloy steel, etc. Carpenter Steel Co., Reading, Pa.
CARPENTER STAINLESS No. 29—Wire for weld rods. The Carpenter Steel Co., Reading, Pa.
CASCADE—Oxygen and nitrogen. The Linde Air Products Co., Unit of Union Carbide & Carbon Corp., New York, N. Y.
CASCO—Liquid and paste flux. Flux-All Chemical Products, New York, N. Y.
CASH-ACME—Regulators and valves. A. W. Cash Valve Manufacturing Corp., Decatur, Ill.
CASTALOY—Cast to shape bucket repointers. Industrial Overlay Metals, Eaton, Ohio.
CASTINGWELD—Electrode for welding cast iron. Westinghouse Electric Corp., E. Pittsburgh, Pa.
CAST-I-NICKEL—Electrode for cast iron welding. Champion Rivet Co., Cleveland, Ohio.
CASTIRONARC—Arc welding electrodes. Universal Welding Corp., Cleveland, Ohio.

CAST-I-STEEL—Electrode for cast iron welding. Champion Rivet Co., Cleveland, Ohio.
CASTOLIN—Alloys and fluxes. Eutectic Welding Alloys Corp., Flushing, N. Y.
CASTOMATIC—Bar Solder. Federated Metals Div., American Smelting & Refining Co., New York, N. Y.
CASTOX—Welding rod and flux. Central Steel & Wire Co., Chicago, Ill.
CAST REFRACT—Refractories. Quigley Co., Inc., New York, N. Y.
CAST-ROD No. 42—Electrode. Marquette Mfg. Co., Minneapolis, Minn.
CASTWELD—Rod. Steel Sales Corp., Chicago, Ill.
CASTWELD—For welding cast-iron. Rankin Mfg. Co., Los Angeles, Calif.
CELL CRETE—Castable refractory. Mexico Refractories Co., Mexico, Mo.
CENTERING HEADS—For locating center or reference line on pipe. Contour Marker Corp., Compton, Calif.
CENTRI-MERGE—Dust collector. Schmieg Industries, Inc., Detroit, Mich.
CERTAIN CURTAIN—Electric heat treating furnaces. C. I. Hayes, Inc., Providence, R. I.
CERTI-CRIMP—Terminals, connectors and crimping tools Aircraft-Marine Prod. Co., Harrisburg, Pa.
CERTIFIED STAINLESS ELECTRODES—Stainless steel electrodes. McKay Co., Pittsburgh, Pa.
CESCO—Goggles, helmets, face shields, respirators. Chicago Eye Shield Co., Chicago, Ill.
CESCOWELD—Glass for lenses and in plate form for welding goggles and helmets for oxy-acetylene and electric welding. Chicago Eye Shield Co., Chicago, Ill.
CHAIN-O-FLEX — Overhead Conveyor. Industrial Equipment Co., Chicago, Ill.
CHALLENGE—Lapping plates, layout surface plates, bench plates, work benches, surface plate, straight edges, solid parallels, box parallels, angle plates, V blocks and abrasive cut off machines. Challenge Machinery Co., Grand Haven, Mich.
CHALLENGE—Steel tapes. Lufkin Rule Co., Saginaw, Mich.
CHALLENGER—A. C. Welder. A. O. Smith Corp., Welding Products Division, Milwaukee, Wis.
CHALLENGER—Spur gear hoist. Coffing Hoist Co., Danville, Ill.
CHAMBERS — Helmet goggles for oxy-acetylene welding and cutting. Carter-Lockard Co., Los Angeles, Calif.
CHAM-CUT—Electric-arc electrode. Pacific Welding Alloys Co., Inc., Los Angeles, Calif.
CHAMFERTRODE — Gouging electrode. Eutectic Welding Alloys Corp., Flushing, N. Y.
CHAMP—Electric arc welder. Precision Welder Mfg. Co., Chicago, Ill.
CHAMPION—A. C. Welder. A. O. Smith Corp., Welding Products Div., Milwaukee, Wis.
CHAMPION—Air compressors. Champion Pneumatic Mach. Co., Chicago, Ill.
CHAMPION—Electrodes. The Champion Rivet Company, Cleveland, Ohio.
CHAMPION—Pneumatic tools. The Dallet Co., Philadelphia, Pa.
CHAMPION—Pipe vise stand. Nye Tool Co., Chicago, Ill.
CHAMPION — Welding goggles, lens. Burdett Oxygen Co., Cleveland, Ohio.
CHAMPION—Fluorescent and incandescent lamps. Champion Lamp Works, Lynn, Mass.
CHAMPION AIRCRAFT—Electrodes for air craft welding. The Champion Rivet Co., Cleveland, O.
CHAMPION DE ARMENT—Hammers, chisels, etc. Champion DeArment Tool Co., Meadville, Pa.
CHANITE—Self-welding electric heating element flux. Chanite Sales Co., Fort Worth, Texas.
CHANNELLOCK—Pliers. Champion De Arment Tool Co., Meadville, Pa.
CHASE—Brass, Bronze, and copper products. Chase Brass & Copper Co., Inc., Waterbury, Conn.
CHEEPEE—Plastic goggles. Watchemoket Optical Co., Providence, R. I.
CHEK-SHOCK—Cushion for protecting regulators and valves on oxygen, hydrogen and other high pressure gas systems. Chek-Shock Mfg. Co., Fowler, Calif.
CHELSEA—Ventilating fans and blowers. Chelsea Fan & Blower Co., Inc., Irvington, N. Y.
CHEMALLOY—Aluminum welding rod. Sightmaster Corp., New Rochelle, N. Y.
CHERRY HEAT—Forge welding compound. Cortland Welding Compound Co., Cortland, N. Y.
CHERRY HEAT-SPECIAL—Various forge welding compounds for special purposes. Cortland Welding Compound Co., Cortland, N. Y.
CHESTER—Hoists, trolleys, etc. The National Screw & Mfg. Co., Chester Hoist Div., Lisbon, Ohio.
CHICAGO GRINDING—Grinding wheels. Chicago Wheel & Mfg. Co., Chicago, Ill.
CHICAGO MOUNTED—Mounted wheels. Chicago Wheel & Mfg. Co., Chicago, Ill.
CHIEF—Fire hose. Quaker Rubber Corp., Philadelphia, Pa.
CHIEF—Steel tape rule. Carlson & Sullivan, Inc., Monrovia, Calif.
CHIEFTAIN—Automatic-welding fixture. Cayuga Machine & Fabricating Co., Inc., Depew-Buffalo, N. Y.
CHIMO—Steel. Firth Sterling Steel & Carbide Corp., McKeesport, Pa.
CHINALAK—Insulating varnish. John C Dolph Co., Newark, N. J.
CHIP-BAN—Safety Glasses. Bausch & Lomb Optical Co., Rochester, N. Y.
CHIP-WELD—Combination welding and chipping goggle. Willson Products, Inc., Reading, Pa.
CHROMANG—Austenitic electrodes. Arcos Corp., Philadelphia, Pa.
CHROMAR—Stainless steel wire. Arcos Corp., Philadelphia, Pa.
CHROME-CLAD—Steel tapes. Lufkin Rule Co., Saginaw, Mich.
CHROME MOLY—Welding rod. Central Steel & Wire Co., Chicago, Ill.
CHROME VANOX—Alloy welding rod. Central Steel and Wire Co., Chicago, Ill.
CHROMEFACE—Austenitic high chromium iron hard facing rods. American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
CHROMEND—Stainless steel electrodes for DC Welding. Acme Corp., Philadelphia, Pa.
CHROMIX—Refractories. Quigley Co., Inc., New York, N. Y.
CHROMOLY—Series of high tensile electrodes. Champion Rivet Co., Cleveland, Ohio.
CINCH—Steel cement. Claud S. Gordon Co., Chicago, Ill.
CIRCLE C—High-speed steel bits. Firth-Sterling Steel and Carbide Corp., McKeesport, Pa.
CIRCLE MIXER—Mixing device in oxy-acetylene torches. Modern Engineering Co., Inc., St. Louis, Mo.
CIROD—Cast iron weld rod. Cirod Distributing Corp., Lyons, Ill.
CLAMPCUT—Milling machine vise and milling cutter. J & S Tool Co., Inc., Livingston, N. J.
CLARK—Electric drills and sanders. James Clark, Jr. Electric Co., Louisville, Ky.
CLASP—Welding cable disconnect splice. Burndy Engineering Co., Inc., New York, N. Y.
CLEAN WELD—Welding and brazing wires. Aluminum Wire Products Co., Inc., Glastonbury, Conn.
CLECO—Pneumatic chippers, hammers and scaling tools. Cleco Div., Reed Roller Bit Co., Houston, Texas.
CLEEPEE—Goggles (one piece) Watchemoket Optical Co., Inc., Providence, Rhode Island.
CLE-FORGE—High-speed drills. The Cleveland Twist Drill Co., Cleveland, Ohio.
CLEANWELD—Spatter resisting compound. Hobart Bros. Co., Troy, Ohio.
CLEPO—Cleaning compounds. Frederick Gumm Chemical Co., Kearny, N. J.
CLETALOY—Material for resistance welding electrodes. Cleveland Tungsten, Inc., Cleveland, Ohio.
CLE-TUNG—Tungsten electrode, atomic hydrogen and inert arc electrodes. Cleveland Tungsten, Inc., Cleveland, Ohio.
CLEVELAND TRAMRAIL—Overhead materials handling equipment. The Cleveland Crane and Engineering Co., Wickliffe, Ohio.
CLEVE-TUNG—Welding products. Cleveland Tungsten, Inc., Cleveland, Ohio.
CLIMAX—Forge welding compound. Cortland Welding Compound Co., Cortland, N. Y.
CLINTON—Wire cloth. Wickwire Spencer Steel Div., The Colorado Fuel & Iron Corp., New York, N. Y.
CLIZBE—Electric bench and floor grinders—and saw mandrels. Clizbe Bros. Mfg. Co., Plymouth, Ind.
CLIZBE ECONOMY—Bench grinder. Clizbe Bros. Mfg. Co., Plymouth, Ind.
CLIZBE SUPER—Bench grinder. Clizbe Bros. Mfg. Co., Plymouth, Ind.
CLOVER—Abrasive papers and cloths, and lapping compounds. Clover Mfg. Co., Norwalk, Conn.
CLOVER—Crayons for marking of metals. Whittaker, Clark & Daniels, Inc., New York, N. Y.
C-O TWO—Fire extinguisher equipment. C-O Two Fire Equipment Co., Newark, N. J.
COAST METALS—Powder welding alloys, brazing alloys, hard facing electrodes and rods, and automatic welding wire. Coast Metals Inc., Little Ferry, N. J.
COAST TWO-WAY—Chipping and scaling air hammers. Coast Pneumatic Tool Co., Los Angeles, Calif.
COBALT—American Optical Co., Southbridge, Mass.
COBALTCHROM—Electrodes. Darwin & Milner, Inc., Cleveland, Ohio.
COFEN—Burn solution for welding burns. Lee Wood, Inc., South Norwalk, Conn.
COFFING DIFFERENTIAL—Hoists. Coffing Hoist Co., Danville, Ill.
COFFING SPUR-GEARED—Hoists. Coffing Hoist Co., Danville, Ill.
COLALLOY—Flux coated and uncoated welding rods. Colonial Alloys Co., Philadelphia, Pa.
COLAWELD—Flux paste, reaction solder rod. Colonial Alloys Co., Philadelphia, Pa.
COLCAP—Helmet liners for top of head. Jackson Products, Inc., Warren, Mich.
COLDARC—Electrodes. Eutectic Welding Alloys Co., Flushing, N. Y.
COLDWELL—Low temperature welding alloy. Eutectic Welding Alloys, Inc., Flushing, N. Y.
COLLMER—Grinding wheel dressers. Collmer Bros., South Bend, Ind.
COLLYER—Welding cables. Collyer Insulated Wire Co., Inc., Pawtucket, R. I.
COLMONOY—Welding rods and electrodes. Wall Colmonoy Corp., Detroit, Mich.
COLMONOY No. 1—Hard facing electrodes. Wall Colmonoy Corp., Detroit, Mich.
COLMONOY Nos. 4, 5, 6—Hard facing alloy rod and powder. Wall Colmonoy Corp., Detroit, Mich.
COLMONOY SPRAYWELDER—Powder metallizing gun. Wall Colmonoy Corp., Detroit, Mich.
COLMONOY SPECIAL No. 1—Hard facing rods. Wall Colmonoy Corp., Detroit, Mich.
COLMONOY SPRAYWELD POWDERS—Hard facing powders for use with sprayweld er. Wall Colmonoy Corp., Detroit, Mich.
COLMONOY SWEAT-ON PASTE—Abrasion resistant paste. Wall Colmonoy Corp., Detroit, Mich.
COLMONOY WCR-100—Oxy-acetylene hard facing rod. Wall Colmonoy Corp., Detroit, Mich.
COLONIAL—Semi-finished form, sheets, rods, tubes, wire. Colonial Alloys Co., Philadelphia, Pa.
COLONIAL—Leather welders' wearing apparel. Colonial Tanning Co., Milwaukee, Wis.
COLONIAL—Compressed gases. New England Gas Products, Inc., Charlestown, Mass.
COLOR HELMET—Arc welding helmet. Thermacote Co., Los Angeles, Calif.
COLOR-STRIPE—Coated abrasive papers and cloths. Clover Manufacturing Co., Norwalk, Conn.
COLUMBIA—Tong test ammeter (AC & DC). Columbia Electric Mfg. Co., Cleveland, Ohio.
COLUMBIAN—Vises. Columbian Vise Mfg. Co., Cleveland, Ohio.
CO-MANG—Build-up austenitic manganese steel rod. American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
COMBI—Electric drills. Wodack Electric Tool Corp., Chicago, Ill.
COMBO-TOOL—Grinders, (electric, portable). Porter-Cable Machine Co., Syracuse, N. Y.
COMET—Electric arc welder. Precision Welder Mfg. Co., Chicago, Ill.
COMET — Electric hoist. Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
COMET—Coated abrasives. Clover Manufacturing Co., Norwalk, Conn.
COMET—Air-control valve. Ross Operating Valve Co., Detroit, Mich.
COMET-ARC—Powder-metal electrode. The McKay Co., Pittsburgh, Pa.
COMFO—Respirator. Mine Safety Appliances Co., Pittsburgh, Pa.
COMMANDO—Jigs, positioners, tip cleaners, soldering tips, aluminum brazing rod and solder, white metal rod, flints and torch lighters, soapstone holders and hand cleaner. J. M. Ragle, Inc., Kansas City, Mo.
COMMERCIAL—Dissolved acetylene. Commercial Acetylene Supply Co., Inc., New York, N. Y.
COMMERCIAL—Acetylene, argon, helium, oxygen and hydrogen. Commercial Gas Corp., Wilkes-Barre, Pa.
COMMERCIAL—A-C arc welders. Electric Arc, Inc., Newark, N. J.
COMMERCIAL BUTANE—Auxiliary fuel. Hope Natural Gas Co., Clarksburg, W. Va.
COMPOUND PRESSURE—Natl. Welding Equip. Co., San Francisco, Cal.
COMPRESS—Polishing wheels. Divine Brothers Co., Utica, N. Y.
CONCENTRIC—Projection press welder. Resistance Welder Corp., Detroit, Mich.
CONDENS-O-WELD — Resistance welding control. Westinghouse Electric Corp., E. Pittsburgh, Pa.
CONDOR—Oxy-Acetylene welding hose. Manhattan Rubber Mfg. Co., Div. Raybestos-Manhattan, Inc., Passaic, N. J.
CONNECTICUT—Fans, exhaust, jigs, fixtures and piping, blow. Connecticut Blower Co., Hartford, Conn.
CON-NEX—Cable connector. Ben Nek Holder Co., Inc., Branford, Conn.
CONSERVO—Hose. Hewitt-Robins, Inc., Stamford, Conn.
CONTINENTAL—Welding rods and electrodes. Continental Steel & Supply Co., San Francisco, Calif.
CONTINENTAL—Industrial furnaces. Continental Industrial Engineering, Inc., Chicago, Ill.
CONTINENTAL—Electrode holder. Welding Engineering Corp., Milwaukee, Wis.
CONTINENTAL RED SEAL—Gasoline engines. Continental Motors Corporation, Muskegon, Mich.
CONTOUR MARKERS—For layout on pipe and structural steel. Contour Marker Corp., Compton, Calif.
CONTOUR-MATIC—Machine tool. De All Co., Desplaines, Ill.
CONTROLARC—D-c rectifier welder. Vickers Electric Div. St. Louis, Mo.
COOL BAND—Sweat bands. Mine Safety Appliance Co., Pittsburgh, Pa.
COOL-CUT—Grinding wheels. Robertson Mfg. Co., Morrisville, Pa.
COOLIE—Electrode holders. Cam-Lock Div.—Empire Products, Inc., Cincinnati, Ohio
COPOX—Flux. Canadian Liquid Air Co., Ltd., Montreal, Canada.
COPPER-ARC—Electrodes for cast iron. American Arc Welders, Inc., Roseau, Minn.
COPPERED 5G—Welding rods. Central Steel and Wire Co., Chicago, Ill.
COPPERED 6G—Welding wire. Central Steel and Wire Co., Chicago, Ill.
COPPERHEAD — Electrode holder jaw insulators. Wagner Mfg. Co., Jackson, Mo.
COPPUS—Ventilating blower, welding exhausters and exhaust fans. Coppus Engineering Corp., Worcester, Mass.
COPPUS VANO VENTILATOR—Ventilator. Coppus Engineering Corp., Worcester, Mass.

COPRCOAT—Steel wire for welding work. Allied Weld-Craft, Inc., Indianapolis, Ind.
CORODEX COIL CLEAN—Coil cleaner, lime scale remover from coils, tanks, steam tables, fountain coils, spray heads, compressor jackets, unit coolers, etc. Allied Products Co., Chicago, Ill.
CORODEX RUST REMOVER—Rust remover. Allied Products Co., Chicago, Ill.
CORROSION-PROOFED—Terminals, connectors and crimping tools. Aircraft-Marine Prod. Co., Harrisburg, Pa.
CORTA 52—Cutting machine. The Burdett Oxygen Co., Cleveland, Ohio.
COR-TEN(USS)—Chromium, copper, silicon. United State Steel Subsidiaries, Pittsburgh, Pa.
CORTEX—Grinding wheels. Cortland Grinding Wheel Corp., Chester, Mass.
CORTLAND—Fluxes and compounds. Anti-Borax Compound Co., Inc., Fort Wayne, Ind.
CORTLAND—Grinding wheels. Cortland Grinding Wheels Corp., Chester, Mass.
CORVIC BRONZE—Copper alloy. Chase Brass & Copper Co., Inc., Waterbury, Conn.
CORVITE—Polishing wheels and sticks. U. S. Rubber Co., Ft. Wayne, Ind.
COUSE—Portable welding shops. Couse Mfg., Inc., Newark, N. J.
COVERGLAS—Goggles. American Optical Co., Southbridge, Mass.
COVERSPECS—Goggles for welders who wear spectacles. Air Reduction Sales Co., New York, N. Y.
COWLES CLEANERS—Alkaline metal cleaners. Cowles Detergent Co., Cleveland, Ohio.
COYNE—Acetylene cylinders. Coyne Mfg. Co., San Francisco, Calif.
CRACKERJACK—Grinding wheel dressers. The Desmond-Stephen Mfg. Co., Urbana, Ohio.
CRAFTSWELD—Oxy-acetylene welding and cutting equipment and underwater accessories. Craftsweld Equipment Corp., Long Island City, N. Y.
CRAMER—Timers. R. W. Cramer Co., Inc., Centerbrook, Conn.
CRANE—Valves, pipe fitting specialties, welded pipe joints, fitting, etc. Crane Co., Chicago, Ill.
CRANELAP—Weldmg nipple and flange. Crane Co., Chicago, Ill.
CRATER-FILLER—Foot-operated auxiliary control. General Electric Co., Schenectady, N. Y.
CRATEX—Rubberized abrasive, burring, smoothing and polishing tools. Crater Mfg. Co., San Francisco, Calif.
CRESCENT—Tempering compound. Anti-Borax Compound Co., Fort Wayne, Ind.
CRESCENT—Non-preformed wire rope. American Cable Div. of American Chain & Cable Co., Inc., Wilkes Barre, Pa.
CRESCENT—Wrenches, pliers, hacksaws, tinsnips, screwdrivers, punches, chisels. Crescent Tool Co., Jamestown, N. Y.
CRESTOLOY—Wrenches, pliers. Crescent Tool Co., Jamestown, N. Y.
CROBALITE—Hardfacing alloys. Crobalt Inc., Ann Arbor, Mich.
CROLOX—Alloy steel. The Babcock & Wilcox Tube Co., Beaver Falls, Pa.
CROLOY—High carbon, high chrome, tool steel. Henry Disston & Sons, Inc., Philadelphia, Pa.
CROLOY—Chromium-moly electrodes. Metal & Thermit Corp., New York, N. Y.
CROLOY—Low-alloy steel arc welding electrode. Champion Rivet Co., Cleveland, Ohio.
CROMALOY—Welding flux. The Linde Air Products Co., Unit of Union Carbide and Carbon Corp., New York, N. Y.
CROMANSIL—Alloy steel. Lukens Steel Co., Coatesville, Pa.
CROMANSIL ELECTRIC—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
CROMOCO—Die steel. Firth-Sterling Steel and Carbide Corp., McKeesport, Pa.
CROMOVAN—Steel. Firth-Sterling Steel and Carbide Corp., McKeesport, Pa.
CROWN—Pipe-cutters wheels, etc., Collmer Bros., South Bend, Ind.
CRUCIBLE—Electrodes. Crucible Steel Co. of America, New York, N. Y.
CRUCIBLE ARC—Tool and die electrodes. C. E. Phillips & Co., Detroit, Mich.
CRUCIBLE ARC No. 600—Cast iron welding electrodes. C. E. Phillips & Co., Detroit, Mich.
CRYSTOLON—Abrasive grinding wheels and refractories. Norton Co., Worcester, Mass.
CRYSTOLON—Abrasives. Armour & Co., Coated Abrasives Div., Chicago, Ill.
CUB—Pneumatic scaling tool. The Dallett Co., Philadelphia, Pa.
CUMALONG—Hoists. The Harrington Co., Philadelphia, Pa.
CUNO—Airline filters. J. N. Fauver Co., Inc., Detroit, Mich.
CUPALOY—An alloy for tips and wheels for electric resistance welding machines. Westinghouse Electric Corp., East Pittsburgh, Pa.
CURLED CHIP—Metal cutting saws. E. C. Atkins & Co., Indianapolis, Ind.
CUSHIONED POWER—Electronic timers. Robotron Corp., Detroit, Mich.
CUT-A-LINE—Portable flame cutting machine. Indiana Oxygen Co., Indianapolis, Ind.
CUT-O-MATIC—Portable flame cutting machine. National Cylinder Gas Co., Chicago, Ill.
CUTAMATIC—Abrasive cutting machines. Campbell Machine Div. of American Chain & Cable Co Inc., Bridgeport, Conn.
CUTLER HAMMER—Magnetic contactors, welding timers, switches and related electrical apparatus. Cutler-Hammer, Inc., Milwaukee, Wis.
CUTMASTER—Cutting torches. Modern Engineering Co., Inc., St. Louis, Mo.
CUTNO—Packing. Greene, Tweed & Co., North Wales, Pa.
CUTTEND—Arc-oxygen type electrode. Arcos Corp., Philadelphia, Pa.
CUTTRODE #1—Cutting electrode. Eutectic Welding Alloys Corp., Flushing, N. Y.
CUTTRODE #2—Cutting electrode, underwater. Eutectic Welding Alloys Corp., Flushing, N. Y.
CYCLODIENE—Metal degreasing solvent. Colonial Alloys Co., Philadelphia, Pa.
CYCLE-PROGRESS—Interval timers. Automatic Temperature Control Co., Inc., Philadelphia, Pa.
CYCLONE—Automatic arcing device. Ergolyte Mfg. Co., Philadelphia, Pa.
CYCLONE—Spur geared hoist. Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
CYCLONE—Mounted points. Robertson Mfg. Co., Morrisville, Pa.
CYCLONE—Portable sandblaster. Victor Equipment Co., San Francisco, Calif.

D

DB—Welding and cutting torches, regulators, supplies and accessories, acetylene generators, specially designed machines for automatic welding and cutting, etc. Air Reduction Sales Co., New York, N. Y.
D-9-VA—Vanadium tool steel. Henry Disston & Sons, Inc., Philadelphia, Pa.
D-29 SILICO—Manganese chisel steel. Henry Disston & Sons, Inc., Philadelphia, Pa.
DH5—Powder-metal electrode. Harnischfeger Corp., Milwaukee, Wis.
DH45—Harnischfeger Corp., Milwaukee, Wis.
DH-2—A-C, D-C electrode for x-ray quality welds. Harnischfeger Corp., Milwaukee, Wis.
D&M—Arc welding electrodes. Darwin & Milner, Inc., Cleveland, Ohio.
D NICKEL—Form of nickel. The International Nickel Co., Inc., New York, N. Y.
DV—Start-stop control, gas & water control, and arc time totalizers. DV Controls Div., Engineer Instruments, Inc., Hayward, Calif.
DX ALLOY—Pneumatic and hand chisels. The Dallett Co., Philadelphia, Pa.
DALBO—Air hose couplings and fittings, air valves. The Dallett Co., Philadelphia, Pa.
DALHART—Spot welding guns, air hydraulic booster, multiple-spot, hydro-automatic welding unit. Dalhart Eng. & Mfg. Co., Van Dyke, Mich.
DALITE—Coated cover lens and goggle lens. L. H. Bullock Co., Richmond, Calif.
DALLETT HOSEDRILL—Pneumatic rotating drill. The Dallett Co., Philadelphia, Pa.
DALWELD—Detachable cable connections for welding cable. The Dallett Company, Philadelphia, Pa.
DANDUX—Welding aprons and curtains. C. R. Daniels, Inc., New York, N. Y.
DARLING—Valves. Darling Valve & Mfg. Co., Williamsport, Pa.
DARWIN—Alloy welding electrodes and rods. Darwin & Milner, Inc., Cleveland, Ohio.
DAYTON—Grinding wheels. Simonds Worden White Co., Dayton, Ohio.
DAYTON SAFETY—Grinding wheels. Simonds Worden White Co., Dayton, Ohio.
DE BOTHEZAT—Exhaust fans. De Bothezat Fans Div., American Machine & Metals, Inc., East Moline, Ill.
DEFENSE—Shutoff value. Security Valve Co., Los Angeles, Calif.
DEHYDRATOR—H_2O vapor removal from air and gas lines. Selas Corp., of America, Philadelphia, Pa.
DELLOY—Hard-facing material. Delloy Metals, Philadelphia, Pa.
DEN-NEX—Skin cream. Dennis Chemical Co., Inc., St. Louis, Mo.
DELTA—Files. Delta File Works, Inc., Philadelphia, Pa.
DELTA—Grinders, welders, machine tools, etc. Delta Power Tool Div. of Rockwell Mfg. Co., Milwaukee, Wis.
DELTA-MILWAUKEE—Grinders; welders; machine tools, etc. Delta Power Tool, Div. of Rockwell Mfg. Co., Milwaukee, Wis.
DEMON—Refractory cement. Plibrico Jointless Firebrick Co., Chicago, Ill.
DENS-O-MATIC—Automatic welding wire. Allied Weld-Craft, Inc., Indianapolis, Ind.
DENVER—Universal flame hardener. Stearns Roger Mfg. Co., Denver, Colo.
DEPENDON—Acetate window shades. Sellstrom Mfg. Co., Chicago, Ill.
DE-SCALER—Rust and scale remover. Turco Products, Inc., Los Angeles, Calif.
DESMOND-HEX—Grinding wheel dressers. The Desmond-Stephen Mfg. Co., Urbana, Ohio.
DESMOND-HUNTINGTON—Grinding wheel dressers. Desmond-Stephen Mfg. Co., Urbana, Ohio.
DESMOND-SHERMAN — Grinding wheel dressers. Desmond-Stephen Mfg. Co., Urbana, Ohio.
DESMOND SIMPLEX—Vises. Desmond-Stephen Mfg. Co., Urbana, Ohio.
DE-STA-CO—Toggle clamps; shim stock, steel and brass; feeler gauge, steels, welding fixture clamps. Detroit Stamping Co., Detroit, Mich.
DESPATCH—Heat treating ovens. Despatch Oven Co., Minneapolis, Minn.
DETROIT—Hoists and cranes. Detroit Hoist & Machine Co., Detroit, Mich.
DETROIT—Portable tensile tester. Detroit Testing Machine Co., Detroit, Mich.
DE VILBISS—Airline fittings and couplings, air compressors fans and masks. The De Vilbiss Co., Toledo, Ohio.
DE WALT—Circular metal cutting saws. De Walt, Inc., Lancaster, Pa.
DI-ACRO—Benders brakes, shears, notchers, punches, rod parters, hydra-power benders and vari-o-speed powershear. O'Neil-Irwin Mfg. Co., Lake City, Minn.
DI-CAST—Welding rod. Canadian Liquid Air Co., Ltd., Montreal, Que., Canada.
DIAL-AMP—A-C arc welders. Shober Sales, Inc., Stockton, Calif.
DIAL-CAL—Dial caliper. Precision Tool Sales Co., Los Angeles, Calif.
DIAL-LECTRIC—AC welders. Harnischfeger Corp., Milwaukee, Wis.
DIAL-LECTRIC—AC and DC welders. Harnischfeger Corp., Milwaukee, Wis.
DIAMALLOY—Hard facing welding electrodes. The Diamalloy Co., Gowanda, N. Y.
DIAMITE—Welding rod. Weatherly Foundry and Mfg. Co., Weatherly, Pa.
DIAMOND M—Steel. Firth Sterling Steel & Carbide Corp., McKeesport, Pa.
DIAMOND W—Brick fire. Quigley Co., Inc., New York, N. Y.
DIAMOND-GRIP—Terminals, connectors and crimping tools. Aircraft-Marine Prod. Co., Harrisburg, Pa.
DIAMONITE—Diamonite Prods. Div., U. S. Quarry Tile Co., Canton, Ohio.
DIAMONDWELD—Hardsurfacing electrodes. A. O. Smith Corp., Welding Products Division, Milwaukee, Wis.
DI-BURS—Kellerflex carbide burs. Pratt & Whitney, Div. Niles-Bennet-Pond Co., West Hartford, Conn.
DICO—Felt polishing wheels and bobs. Divine Brothers Co., Utica, N. Y.
DIDYMIUM—Lenses. American Optical Co., Southbridge, Mass.
DIECARB—Blanking and forming dies. Firth-Sterling Steel & Carbide Corp., Pittsburgh, Pa.
DIEWELD—Electrode. Steel Sales Corp., Chicago, Ill.
DIEWELD—Electrode. Steel Sales Corp., Chicago. Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
DIFOLD—Buffs. Divine Brothers Co., Utica, N. Y.
DILLON—Portable tensile testing machines. W. C. Dillon and Co., Chicago, Ill.
DILUTERS—For Pre-mixing gas. Eclipse Fuel Eng. Co. Rockford, Ill.
DIMALOY—Tungsten carbide electrodes and gas rods. Industrial overlay Metals, Eaton, Ohio.
DIPWELL—Flux pot. Boyd Welding Supply Co., Erie, Pa.
DIRECTAIR—Air control valves. Hannifin Corp., Chicago, Ill.
DISC-CENTER—Wire wheel brushes. The Osborn Manufacturing Co., Cleveland, Ohio.
DISKETTE—Portable electric tools. N. A. Strand Div. Franklin Balmar Corp., Baltimore, Md.
DIVCO—Alloys, tinning compounds, fluxes, solders, and metallizing wires. Division Lead Co., Summit, Ill.
DIVERSEY—Metal cleaners. The Diversey Corp., Metal Industries Dept. Chicago, Ill.
DIVERSEY NO. 36—Tank cleaner for aluminum. Diversey Corp., Metal Industries Dept. Chicago, Ill.
DIVERSEY—NO. 514—Deoxidizer for aluminum. Diversey Corp., Metal Industries Dept., Chicago, Ill.
DIVERSEY No. 909—Soak cleaner for all metals. Diversey Corp., Metal Industries Dept., Chicago, Ill.
DIVINE—Abrasive belt grinding and polishing machine, polishing and buffing wheels, machinery and supplies. Divine Bros. Co., Utica, N. Y.
DIXON—Graphite rods and plate. Joseph Dixon Crucible Co., Jersey City, N. J.
D-LUX—Plastic goggles. Watchemoket Optical Co., Providence, R. I.
DO—Electrode holders. Plastal Manufacturing Co., Pasadena, Calif.
DO-ALL—Contour and high speed sawing machines; saw bands, surface grinders, butt welders, band filing machines, band files and welding machines. The Do-All Company, Des Plaines, Ill.
DO-ALL—Portable electric tool. Wodack Electric Tool Corp., Chicago, Ill.
DO-ALL ZEPHYR—High speed band saws. Do-All Co., Des Plaines, Ill.
DOC ALLOY KIT—Maintenance and sampler kit. All-State Welding Alloys Co., Inc., White Plains, N. Y.
DOCKSON—Welding equipment. Dockson Corp., Detroit, Mich.
DOMINION—Liquid air oxygen and nitrogen. Dominion Oxygen Company, Ltd., Toronto, Ont., Canada.
DOUBLE CIRCLE TOOLS—Drills and reamers, etc. Chicago-Latrobe Twist Drill Works, Chicago, Ill.
DOWMETAL—Magnesium alloys. The Dow Chemical Co., Midland, Mich.
DRAWALLOY—Welding electrodes. Welding Equipment and Supply Co., Detroit, Mich.
DREADNAUT—Welding and chippers goggle. American Optical Co., Southbridge, Mass.

DREDNAUT—Goggles and lenses. Safety Equipment Service Co., Cleveland, Ohio.
DRILVISE—Hydraulic, foot operated milling vise. Studebaker Machine Co., Maywood, Ill.
DRIOX—Oxygen and nitrogen. The Linde Air Products Company, Div. of Union Carbide and Carbon Co., New York, N. Y.
DRIVE FIT—Tips for burners. Eclipse Fuel Co., Rockford, Ill.
DRY-CRISP—Rust preventive. Merix Chemical Co., Chicago, Ill.
DRY ROD—Electrode drying oven. Phoenix Prod. Co., Milwaukee, Wis.
DUALARC—D. C. welding equipment. Electric Arc Inc., Newark, N. J.
DUAL GRIP—"C" clamps. Grand Specialties Co., Chicago, Ill.
DUAL HOSE—Twin hose. Burdett Oxygen Co., Cleveland, Ohio.
DUAL HOSE—Welding hose. National Cylinder Gas Co., Chicago, Ill.
DUAL-LOCK—Shutoff valve. Eclipse Fuel Eng. Co., Rockford, Ill.
DUAL-TOOL—Combination weld cleaning tool. Atlas Welding Accessories Co., Detroit, Mich.
DUAL-WELD—Spot and arc welder. Delta Power Tool Div. of Rockwell Mfg. Co., Milwaukee, Wis.
DUCTO—Welding electrode. Hobart Bros., Troy, O.
DUCTONE—Electrodes. Chicago Steel and Wire Co., Chicago, Ill.
DUDGEON—Hydraulic jacks and pumps. Richard Dudgeon, Inc., New York, N. Y.
DUDGEON UNIVERSAL — Hydraulic jacks and pumps. Richard Dudgeon, Inc., New York, N. Y.
DUFF—Jacks. Duff-Norton Mfg. Co., Pittsburgh, Pa.
DUMORE—Grinders and flexible shaft machines. Dumore Co., The, Racine, Wis.
DUOGRAPH—Automatic power driven cutting machine. Air Reduction Sales Co., New York, N. Y.
DUO-SQUARE—Welding positioner. McFerron-Myers Products Co., Cleveland, Ohio.
DUO-SQUARE—Work holder. McFerron-Myers Products Co., Rocky River, Ohio.
DUO-TROL—Combined heat control and magnetic welding timer. National Time and Signal Corp., Detroit, Mich.
DUOWELD—Filter lenses. Fish-Shurman Corp., New York, N. Y.
DUOWELD—Oxy-acetylene hose. B. F. Goodrich Co., Akron, Ohio.
DUPLEX—Welding and cutting torches. K-G Equipment Co., Inc., New York, N. Y.
DUPLEX—Hand grinder. Dumore Co., Racine, Wis.
DUPLEX—Abrasive belt grinders. Wells Sales Corp., New York, N. Y.
DUPLEX-TANDEM—Regulator. Modern Engineering Co., Inc., St. Louis, Mo.
DURA-BILT—Rotary wire wheelbrush. The Milwaukee Brush Mfg. Co., Milwaukee, Wis.
DURACUT—Abrasive disc-wheel. Bay State Abrasive Products Co., Westboro, Mass.
DURADIANT—Radiant ceramic gas burners. Selas Corp. of America, Philadelphia, Pa.
DURAFLEX—Arc welding cable. Westinghouse Electric Corp., Pittsburgh, Pa.
DURAGARD—Chipping goggles. American Optical Co., Southbridge, Mass.
DURAGARDE—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
DURALATEM—Hard surfacing rods. Permalatem Welding Alloys, Inc., Red Bank, N. J.
DURALITE—Chippers goggles. American Optical Co., Southbridge, Mass.
DURALOY—Chrome-iron chrome-nickel-steel, and nickel-chrome-steel alloys, Duraloy Co., Scottdale, Pa.
DURATEX—Utility fireproof curtains. Duracote Corp., Ravenna, Ohio.
DURAWELD—Welder's goggles. American Optical Co., Southbridge, Mass.
DURFACE—Special rods and electrodes. Eutectic Welding Alloys Co., Flushing, N. Y.
DURITE—Silicon carbide coated abrasive. Behr-Manning Corp., Troy, N. Y.
DURO—Electrode holders. Duro Engineering Co., Hamden, Conn.
DURO-LITE—Lightweight electrode holder. Duro Engineering Co., Hamden, Conn.
DURONZE—Silicon bronze. Bridgeport Brass Co., Bridgeport, Conn.
DUSKOLECTORS—Filter type cyclone and dust collectors. Hammond Machinery Builders, Inc., Kalamazoo, Mich.
DUST-BAN—Safety goggles. Bausch & Lomb Optical Co., Rochester, N. Y.
DUSTCOTE—Electrode. Harnischfeger Corp., Milwaukee, Wis.
DUSTFOE—Respirators, hoods and masks. Mine Safety Appliances Co., Pittsburgh, Pa.
DUSTKOP—Dust collectors, blowers and exhausters. Aget-Detroit Co., Ann Arbor, Mich.
DUSTUBE—Cloth-tube-type dust collector. American Wheelabrator & Equipment Corp., Mishawaka, Ind.
DUTCH BOY—Solder and tinning compound, fittings, babbitt metals and lead wool. National Lead Co., New York, N. Y.
DUZWELD—Welding and cutting equipment and supplies. New York Welding Supply Co., New York, N. Y.
DYER—Spot welders. Topeka Foundry & Iron Works Co., Inc., Topeka, Kan.
DYNA-FLASH—Portable electric drills, grinders and sanders. Milwaukee Electric Tool Corp., Milwaukee, Wis.
DYNARC—Arc-torch for piercing refractories. Eutectic Welding Alloys Corp., Flushing, N. Y.
DYNA-SWITCH—Crane overload switch. W. C. Dillon & Co., Chicago, Ill.
DYNAFLEX—Hose. Mulconroy Co., Philadelphia, Pa.
DYNAMASTER—Pyrometers and strain gauges. Bristol Co., Waterbury, Conn.
DYNAMITE—Hose. Mulconroy Co., Philadelphia, Pa.
DYNATRODE—Special purpose electrode used in the dynarc process. Eutectic Welding Alloys Corp., Flushing, N. Y.
DYNO-MITE—Portable electric drills. Millers Falls Co., Greenfield, Mass.

E

EB—Weld insert. Arcos Corp., Philadelphia, Pa.
EC&M—Automatic welding timers. Electric Controller and Mfg. Co., Cleveland, Ohio.
EC&M LINE ARC—Magnetic contactors. Electric Controller and Mfg. Co., Cleveland, Ohio.
EC&M NEOTROL—Weld timers for use on air or hydraulically-operated welding machines. Electric Controller & Mfg. Co., Cleveland, Ohio.
E. J. WELDER—Horsehide welding gloves. E. J. Streichert, Chicago, Ill.
EL—Electronic tubes. Electronics, Inc., Newark, N. J.
ELC—Low-carbon stainless steels. Armco Steel Corp., Middletown, O.
E-M—High frequency generators. Electric Machinery Mfg. Co., Minneapolis, Minn.
E-Z—Welding and tempering compounds. Anti-Borax Compound Co., Ft. Wayne, Ind.
E-Z CUT—Free machining steel plate. Joseph T. Ryerson & Sons, Inc., Chicago, Ill.
E-Z ACT—Clamp. McFerron-Myers Products Co., Cleveland, Ohio.
EASTERN STAYPUT—Hose couplings and fittings. J. N. Fauver Co., Inc., Detroit, Mich.
EASTON—Woven cotton belting. Victor Balata & Textile Belting Co., New York, N. Y.
EASY—Finishing sanders, portable, electric and pneumatic. Detroit Surfacing Machine Co., Detroit Mich.
EASYARC—Iron-powder electrode. Air Reduction Sales Co., New York, N. Y.
EASYFLEX—Welding cable. Progressive Welder Co., Detroit, Mich.
EASY-FLO—Silver brazing alloy. Handy & Harman, New York, N. Y.
EASY MOUNT—Grinding wheels. Sterling Grinding Wheel Div., The Cleveland Quarries Co., Tiffin, Ohio.
EASYWELD—Electrode for A-C arc welding. Universal Welding Corp., Cleveland, Ohio.
ECGCO—Coated cover glass for welders' helmets and coated electric light bulbs. Electro Cover Glass Co., Inc., Sharpsburg, Br., Pittsburgh, Pa.
ECLIPSE—Magnetic holder. L. H. Chappel & Co., Fairfield, Conn.
ECONO-SPEED—Blast oven furnace. Eclipse Fuel Eng. Co., Rockford, Ill.
ECONOMIZER—Valve device which shuts off oxygen and acetylene when torch is hung on hooked lever. National Cylinder Gas Co., Chicago, Ill.
ECONOMY—Welding and cutting outfits. Burdett Oxygen Co., Cleveland, Ohio.
ECONOMY—Grinders and buffers. The Hisey Wolfe Machine Co., Cincinnati, Ohio.
ECONOMY—Wirewheel brush. The Osborn Mfg. Co., Cleveland, Ohio.
ECONOMY "C"—Mortensinc steel hard facing rod. American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
EDCO—Copper electrodes. Davies & Son, Inc., Los Angeles, Calif.
EDGEWATER—Firehose. Quaker Rubber Corp., Philadelphia, Pa.
No. 8 NON-CORROSIVE—Flux. Farrelloy Co., Philadelphia, Pa.
18-8 STAINLESS—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
EIMAC—Electric tubes; vacuum pumps and high vacuum switches. Eitel-McCullough, Inc., San Bruno, Calif.
EISLER—Spot welders and A-C arc welders. Eisler Engineering Co., Newark, N. J.
EITHEREND—Cable connectors. Albert J. M. Anderson Mfg. Co., Boston, Mass.
EJECTOR TYPE—Electrode holders. S-M-S Corp., Detroit, Mich.
ELECTRA—Steel loading chain. The Cleveland Chain Mfg. Co., Cleveland, Ohio.
ELECTRIC—Hose. J. N. Fauver Co., Detroit, Mich.
ELECTRIC LACQUER—Insulating varnish. John C. Dolph Co., Newark, N. J.
ELECTR-O-LINE—Electric proportional control relay. Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.
ELECTR-O-PULSE—Electric proportional control relay, (pulse type). Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.
ELECTRO—Grinding wheels. Electro Refractories and Alloy Corp., Buffalo, N. Y.
ELECTRO-FLUX-STIK—Soldering flux for aluminum and electric apparatus. Lake Chemical Co., Chicago, Ill.
ELECTROD—Arc welding electrode. Steel Co. of Canada, Ltd., Hamilton, Ont., Canada.
ELECTROFLO—Solenoid operated valve. Hays Mfg. Co., Erie, Pa.
ELECTROLON—Grinding wheels. Simonds Abrasive Co., Philadelphia, Pa.
ELECTROLOY—Copper, dies, electrodes and electrode holders, jigs and fixtures, welding wheels. Electroloy Co., Inc., Bridgeport, Conn.
ELECTROMET—Ferro-alloys and non-ferrous alloying metals. Electro Metallurgical Sales Corp., New York, N. Y.
ELECTRO-MITE—Solenoid operated valve. Hays Mfg. Co., Erie, Pa.
ELECTRONIC STEAM—Arc, electronic welder. Casco Products, Inc., Chicago, Ill.
ELECTRONIK—Pyrometers. Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.
ELECTROPAK—Electrode package. Arcos Corp., Philadelphia, Pa.
ELECTRO-STAYNEW—Mist collector. Dollinger Corp., Rochester 3, N. Y.
ELECTROWELD—Electric welding tube mill. American Electric Fusion Corporation, Chicago, Ill.
ELECTRONIC TORNADO—Carbon arc electric welder. Lincoln Electric Co., Cleveland, Ohio.
ELECTRUNITE—Tubing. Republic Steel Corp., Steel & Tube Div., Cleveland, Ohio.
ELECWELD—Electrodes. Steel Sales Corp., Chicago, Ill.
ELEPHANT BRAND—Phosphor bronze casting, bar and sheets, welding rods, wire rope and wire. Phosphor Bronze Corp., Seymour, Conn.
ELESCO—Locomotive superheaters, feed water heaters, and exhaust steam injectors. Superheater Co., New York, N. Y.
ELGIN—A-C arc welders. Borm Mfg. Co., Elgin, Ill.
ELIED—Acid core, rosin core, and wire solders. Farrelloy Co., Philadelphia, Pa.
ELIN—DC arc welder. American ELIN Corp., New York, N. Y.
ELIPTO-LITE PLAY AREA—Floodlights. Benjamin Electric Mfg. Co., Des Plaines, Ill.
ELKALOY—A copper alloy for resistance welding applications. P. R. Mallory & Co., Inc., Indianapolis, Ind.
ELKONITE—High conductivity refractory materials used in resistance welding applications. P. R. Mallory & Co., Inc., Indianapolis, Ind. and SMS Corp., Detroit, Mich.
ELLIOT—Flexible shaft grinders. Elliott Manufacturing Co., Binghamton, N. Y.
ELLPRO—Electrode for arc cutting under water. Ellwood Products Co., Ellwood City, Pa.
ELLSBERG—Under-water cutting torch. Craftsweld Equipment Corp., Long Island City, N. Y.
ELMES—Hydraulic presses, electrode extrusion presses and general purposes presses. Charles F. Elmes Engineering Co., Chicago, Ill.
ELMET—Pure or thoriated tungsten welding electrodes. North American Philips Co., Inc., Elmet Div., Lewiston, Maine.
EMALFON—Insulated welding gloves. Singer Glove Mfg. Co., Chicago, Ill.
EMCO—Hard surfacing metals. Eld Metal Co. Ltd., Los Angeles, Cal.
EMERSON—A-C arc welder. Emerson Electric Mfg. Co., St. Louis, Mo.
EMPIRE—Rubber and composition mallets. Greene, Tweed & Co., North Wales, Pa.
ENDURO—Stainless steels. Republic Steel Corp., Republic Bldg., Cleveland, Ohio.
EQUALOAD—Motor, generator and slip ring brushes. Keystone Carbon Co., Inc., St. Marys, Pa.
EQUIPTO—Steel shelving; parts bins; tool cribs; stock carts; work benches; tool stands, etc. Equipto Division of Aurora Equipment Co., Aurora, Ill.
ERGOLYTE—A-C arc welders, arc torch for brazing, welding, preheating, etc. Ergolyte Mfg. Co., Philadelphia, Pa.
ERIFON—Flame retardant. E. I. du Pont de Nemours Co., Inc., Wilmington, Del.
ES—Stainless steel sheets. Eastern Stainless Steel Corp., Baltimore, Md.
ES NO. 100 GRIT FINISH— Stainless steel sheets. Eastern Stainless Steel Corp., Baltimore, Md.
ESICO—Soldering irons and tips. Electric Soldering Iron Co., Inc., Deep River, Conn.
ESSANAY—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
ESSANAY SODA—ACID RECHARGE—Fire extinguisher recharger. Pyrene Manufacturing Co., Newark, N. J.
ESSEE—Welders' clothing and leather. S. C. Leather Co., Pittsburgh, Pa.
ESTOX—Metal cleaners. Standard Supply Co., New Haven, Conn.
EUREKA—Electrode holders. The Fibre-Metal Products Co., Chester, Pa.
EUREKA—Welding helmet. Welding Engineering Co., Milwaukee, Wis.
EUREKA—Welding rods; electrodes and fluxes. Welding Equipment and Supply Co., Detroit, Mich.
EUREKA—Soldering fluxes. E. I. du Pont de Nemours Del.
EUTECHROM—Hard facing material. Eutectic Welding Alloys Corp., Flushing, N. Y.
EUTECROD—Welding rods. Eutectic Welding Alloys Corp., Flushing, N. Y.
EUTEC-SILVER-WELD—Silver brazing type alloy. Eutectic Welding Alloys Corp., Flushing N. Y.
EUTEC-STAINROD—Stainless steel welding rod. Eutectic Welding Alloys Corp., Flushing, N. Y.
EUTEC-STAINTRODE—Stainless steel welding electrode. Eutectic Welding Alloys Corp., Flushing, N. Y.
EUTEC-TINWELD—Series of solders in paste form where the solder and flux are combined. Eutectic Welding Alloys Inc., Flushing, N. Y.
EUTECTIC LOW TEMPERATURE WELDING RODS—Welding rods. Eutectic Welding Alloys Corp., Flushing, N. Y.
EUTECTOR—Fluxes. Eutectic Welding Alloys Corp., Flushing, N. Y.

EUTECTROFILM—Metallic coating applied to oxy-acetylene rods to improve bonding and flowing properties. Eutectic Welding Alloys Inc., Flushing, N. Y.
EUTECTRODE—Welding electrode. Eutectic Welding Alloys Corp., Flushing, N. Y.
EVEN-FLOW—Manifold control unit. National Cylinder Gas Co., Chicago, Ill.
EVEN TRIM—Spiral wound brushes. Pittsburgh Plate Glass Co., Baltimore, Md.
EVERDUR—Copper, silicon alloy welding rod. American Brass Co., Waterbury, Conn.
EVER-KLEAR—Cover lens. F. R. Faulk, Pittsburgh, Pa.
EVERITE—Pickling medium for iron and steel. Diversey Corp., Metal Industries Dept., Chicago, Ill.
EVERLITE—Torch lighters and flints. Flint Products Co., Brooklyn, N. Y.
EVERSTAY—Alloy for repairing scored cylinders. The Omaha Welding Co., Omaha, Neb.
EVER-STICK—Alloy for repairing scored cylinders. Federated Metals Division, American Smelting and Refining Co., Whiting, Ind.
EXCELOLITE—Welding lens and plates. Sellstrom Mfg. Co., Chicago, Ill.
EXCITRON—Rectifier. Allis-Chalmers Mfg. Co., Milwaukee, Wis.
EXIDE—Batteries. The Electric Storage Battery Co., Philadelphia, Pa.
EXPENDABLE—Salt tablet dispensers. United States Safety Service Co., Kansas City, Mo.
EXPERT—Welding and cutting equipment. Modern Engineering Co., Inc., St. Louis, Mo.
EXTRA—Water hardening tool steel. Henry Disston & Sons, Inc., Philadelphia, Pa.
EXTERNO TANK HEATER—Furnace. Eclipse Fuel Eng. Co., Rockford, Ill.
EXTRA-FLEX—Welding cable. Burdett Oxygen Co. Cleveland, Ohio.
EYE-GARD—Welding goggles, lens. Burdett Oxygen Co., Cleveland, Ohio.
EYEGARD—Goggles, plates and lenses and face shields. American Industrial Safety Equipment Co., Cleveland, Ohio.
EYE SAVER—Safety goggle. Watchemoket Optical Co., Inc., Providence, R. I.
EZY-FLEX—Welding cable. National Welding Supply Co., Charlotte, N. C.

F

F-M—Cooling unit for circulating liquid coolant through electrode tips of spot welder. Fairbanks-Morse and Co., Chicago, Ill.
F. S. BEST—Steel. Firth Sterling Steel & Carbide Corp., McKeesport, Pa.
F. S. EXTRA—Steel. Firth Sterling Steel & Carbide Corp., McKeesport, Pa.
FW—AC-DC electrode. Harnischfeger Corp., Milwauke, Wis.
FACEWELD—Hardsurfacing electrode. Lincoln Electric Co., Cleveland, Ohio.
FACE-FITT—Welding and chipping goggles. Kimball Safety Prod. Co., Cleveland, Ohio.
FAIRWAY—Salt tablets and plastic dispensers. Standard Safety Equipment Co., Chicago, Ill.
FALCON—Electric furnaces, portable elec. preheating and stress relieving; heating and control panels. Falcon Equipment Co., New Brighton, Pa.
FAMCO—Arbor presses, foot presses, power presses, foot squaring shears, power squaring shears, drill presses and horizontal metal cut-off saws. Famco Machine Co., Racine, Wis.
FAN-PAC—Exhaust fans. De Bothezat Fans Div., American Mach. & Metals, Inc., East Moline, Ill.
FANSTEEL—Tungsten electrodes and tempered soldering tips. Fansteel Metallurgical Corp., North Chicago, Ill.
FANWELD—Hard facing metal. Fansteel Metallurgical Corp., North Chicago, Ill.
FARBER—Fire brick. North American Refractories Co., Cleveland, Ohio.
FARCO—Brick, soldering salts, solder. Farreloy Co. Philadelphia, Pa.
FARLENE-OILMETER—Flux. Farrelloy Co., Philadelphia, Pa.
FARM-WELD—Electric arc welder. American Welder Mfg. Co., Chicago, Ill.
FARM-WISE—100 v. arc welder. Calf-teria Sales, Inc., Ft. Wayne, Ind.
FARMFACE—Austenitic high chromium iron hard facing rod. American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
FARRELLOY—Solder. Farrelloy Co., Philadelphia, Pa.
FARSOL—Soldering paste. Farrelloy Co., Philadelphia, Pa.
FAST-ACTION—Welding clamps. Hallwell Tool Co., Los Angeles, Calif.
FAST-FLO FLUX—Silver brazing flux. American Chemical and Flux Co., Brooklyn, N. Y.
FASTFOME—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
FASTFOME FOAM RECHARGER—Fire extinguisher recharger. Pyrene Manufacturing Co., Newark, N. J.
FASTIN—Paste solder. Farreloy Co., Philadelphia, Pa.
FASTWELL—High speed electrode. Steel Sales Corp., Chicago, Ill.
FAULTLESS—Oxy-acetylene hose. The Home Rubber Co., Trenton, N. J.
FAVORITE—Ratchet wrenches. Greene, Tweed & Co., North Wales, Pa.
FAXFILM—Inspection magnifiers. Brush Development Co., Cleveland, Ohio.
FEATHER SPEC—Goggles. Willson Products, Inc., Reading, Pa.
FEATHERLIGHT—Arc welding electrode holders and cable connectors. Jackson Products, Warren, Mich.
FEATHERWEIGHT—Face shields. Dockson Corp., Detroit, Mich.
FEDERAL—Electric spot welding machinery, projection welders, seam welders, portable welders, flash welders, heaters and electric transformers. Federal Machine and Welder Co., Warren, Ohio.
FEDERAL NOARK—Controls, magnetic contactors, general purpose relays and switches. Federal Electric Products Co., Newark, N. J.
FEDREX—Lightweight, portable, x-ray machines. Machinery & Welder Corp., Chicago, Ill.
FEND—Protective skin creams. Mine Safety Appliance Co., Pittsburgh, Pa.
FENDALL—Goggles, face shields, and lenses. Fendall Co., Chicago, Ill.
FERREX—Metals cleaner. Turco Products, Inc., Los Angeles, Calif.
FERRO—Cast iron welding flux. Linde Air Prod. Co., a Div. of Union Carbide & Carbon Corp., New York, N. Y.
FERRO BOND—Stainless clad steel. Worth Steel Co., Claymont, Del.
FERROFIT—Nozzles for burners. Eclipse Fuel Engineering Co., Rockford, Ill.
FERROFLAME—Powder for powder flame cutting. National Cylinder Gas Co.
FERROJET—Powder cutting equipment. National Cylinder Gas Co., Chicago, Ill.
FERROWELD—Welding electrode. Lincoln Electric Co., Cleveland, Ohio.
FERULOK—Tube fittings. The Parker Appliance Co., Cleveland, Ohio.
FEATHERWATE-STREAMLINER—Welders' helmet. Sellstrom Mfg. Co., Chicago, Ill.
FIBRE-METAL—Welding helmets and face shields. The Fibre Metal Products Co., Chester, Pa.
FIBREX—Grinding wheels. Simonds Abrasive Co., Philadelphia, Pa.
FIELD KING—D. C. Engine driven welder. A. O. Smith Corp., Welding Products Division, Milwaukee, Wis.
"51" NICKEL—For welding of pure nickel. International Nickel Co., Inc., New York, N. Y.
"52" INCONEL—Electrode for welding Inconel. International Nickel Co., Inc., New York, N. Y.
FILLERARC—Mig (Metal inert-gas) welding equipment. General Electric Co., Welding Div., Schenectady, N. Y.
FILLERWELD—Semi-automatic filler wire feeder for inert-arc welding. General Electric Co., Fitchburg, Mass.
FILLEX—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
FILTERWELD—Filter glass, plates and lenses. American Optical Co., Southbridge, Mass.
FIRECRETE—Refractories. Johns-Manville, New York, N. Y.
FIRE-GUN—Torches. Hauck Mfg. Co., Brooklyn, N.Y.
FIRE GUN—Propane torch. Fire Gun Sales Corp., Denver 4, Colo.
FIREFOIL—Panel. The Philip Carey Mfg. Co., Lockland, Cincinnati, Ohio.
FIREYE—Flame-failure safeguards, for oil and gas burners. Combustion Control Corp., Cambridge, Mass.
FIRTHALOY—Sintered carbide adapted to wire drawing dies, extrusion dies and similar purposes. Firth-Sterling Steel and Carbide Corp., McKeesport, Pa.
FIRTHITE—Form of sintered tungsten carbide for cutting tools, gauges, etc. Firth-Sterling Steel and Carbide Corp., McKeesport, Pa.
FIXER-NEUTRALIZER—X-ray film processor. General Electric Corp., Milwaukee, Wis.
FIXTURE FRAMERS—Clamps. Detroit Stamping Co., Detroit, Mich.
FLAMEBLAST—Gas-electric blowtorch. Made by North American Mfg. Co., Cleveland, Ohio.
FLAMECRAFT—Oxy-acetylene welding and cutting outfit. Air Reduction Sales Co., New York, N. Y.
FLAMEMASTER—Shape cutting machine. Indiana Oxygen Co., Indianapolis, Ind.
FLAME-O-GRAPH—Flame cutter. Victor Equipment Co., Welding Equipment Div., San Francisco, Calif.
FLAME-PRUF—Water soluble powder for treating clothes or other fabrics which prevents them from igniting when exposed to sparks. Wolfe-Kote Co., Sheboygan, Wis.
FLAME-RITE—Soldering outfits. National Welders Supply Co., Charlotte, N. C.
FLAME SHAPER—Portable flame cutting machines. Shrader-Bowers Co., Mishawaka, Ind.
FLASH—Circle burner. Scientific Research Co., Portland, Ore.
FLASH-EX—Flash preventative. Wayne Chemical Products Co., Detroit, Mich.
FLASH OFF NO. 99—Welding spatter compound. Acme White Lead & Color Wks., Detroit, Mich.
FLATFEET—Fixture feet. Jergens Tool Specialty Co., Cleveland, Ohio.
FLATWEAVE—Wire rope sling. John A. Roebling's Sons Co., Trenton, N. J.
FLEET-ARC—A-C welders. Lincoln Electric Co., Cleveland, Ohio.
FLEETWELD—Shielded arc electrodes by Lincoln Electric Co., Cleveland, Ohio.
FLEETWELDER—AC welders. The Lincoln Electric Co., Cleveland, Ohio.
FLEXALOY—Hard-facing electrodes. Industrial Overlay Metals, Eaton, Ohio.
FLEXARC—Arc welding apparatus, electrodes and accessories. Westinghouse Electric Corp., Pittsburgh, Pa.
FLEXAUST—Ventilating hose. American Ventilating Hose Co., New York, N. Y.
FLEXCELO—Fire hose. Republic Rubber Div., Lee Rubber and Tire Corp., Youngstown, Ohio.
FLEXIBLE ABRASIVE—Flexible abrasive stones. Ideal Industries, Inc., Sycamore, Ill.
FLEXI-BILT—Steel Bins. Berger Mfg. Div. of Republic Steel Corp., Canton, Ohio.
FLEX-COVER—Flat plastic plates and lenses. Sellstrom Mfg. Co., Chicago, Ill.
FLEX-SET—Wire rope. Broderick & Bascom Rope Co., St. Louis, Mo.
FLEXSPEED—Buffing and polishing lathe. Divine Brothers Co., Utica, N. Y.
FLEX-TESTER—Sheet metal tester. Steel City Testing Machines, Inc., Detroit, Mich.
FLINT—Gas spark lighters and renewal flints. Flint Products Co., Brooklyn, N. Y.
FLINTWELD—Hard surfacing rod. Steel Sales Corp., Chicago, Ill.
FLO-KOTE—Manganese-nickel electrode. Stulz-Sickles Co., Newark, N. J.
FLO-EZ-FLUX—Gas welding aluminum fluxes. Park-Stewart, Worthington, Pa.
FLO-EZ-FLUX NO. 5—Gas welding magnesium fluxes. Park-Stewart, Worthington, Pa.
FLO-SCOPE—Flow rate indicator for air and gas lines. Selas Corp. of America, Philadelphia, Pa.
FLOOD—Helmets. Borm Mfg. Co., Elgin, Ill.
FLO-SET—Speed control valve. Hanna Engrg. Works, Chicago, Ill.
FLOTECTIC—Flux. Eutectic Welding Alloys Co., Flushing, N. Y.
FLOTITE NO. 2—Cast iron chrome, steel elec. weld flux. Pittsburgh Metals Purifying Co., Pittsburgh, Pa.
FLOTITE NO. 3—Brass brazing flux. Pittsburgh Metals Purifying Co., Pittsburgh, Pa.
FLO-WELL NO. 1—Flux for gas welding. A. K. Mauk, Pittsburgh, Pa.
FLO-WEL NO. 2—Brazing flux. A. K. Mauk, Pittsburgh, Pa.
FLOWLINE—Welding fittings. Welding Fittings Corp., New Castle, Pa.
FLUTED ELECTRODES—Resistance welding electrodes. P. R. Mallory & Co., Inc., Indianapolis, Ind.
FLUX INJECTION—Power cutting. Air Reduction Sales Co., New York, N. Y.
FLUX-FEEDER—Flux dispenser. Air Reduction Sales Co., New York, N. Y.
FLUXINE—Fluxes. Krembs & Co., Chicago, Ill.
FLUX-RITE—Welding fluxes. National Welding Supply Co., Charlotte, N. C.
FLUXRITE—Fluxed wire solder. National Lead Co., New York, N. Y.
FLUX-STIK—Soldering flux in stick form. Lake Chemical Co., Chicago, Ill.
FLUX-WELL—Flux. Chicago Hardware Foundry Co., North Chicago, Ill.
FLXO 666—Welders gloves. Boss Mfg. Co., Kewanee, Ill.
FOAMITE—Fire extinguishers and air foam. American La France Foamite Corp., Elmira, N. Y.
FOAMITE CRUSADER—Fire extinguishers. American La France-Foamite Corp., Elmira, N. Y.
FOG-BAN—Anti-fog compounds. Bausch & Lomb Optical Co., Rochester, N. Y.
FOILLE—Burn spray and first aid kit. Mine Safety Appliances Co., Pittsburgh, Pa.
FOLEY—Drill presses, band and circular saws, jigsaws, wood lathes, saw grinders, etc. Foley Mfg. Co., Minneapolis, Minn.
FORD—Chain hoist. Ford Chain Block Division of American Chain & Cable Co., Inc., York, Pa.
FORM-A-JIG—Non-metallic, pliable, heat resisting compound for holding small parts during joining. Eutectic Welding Alloys Corp., Flushing, N. Y.
FORMINCO—Products used for welding rod and electrode coatings and fluxes. Made by the Foote Mineral Co., Philadelphia, Pa.
FORMULA 953—Metal cleaner. Kelite Products, Inc., Los Angeles, Calif.
FORNEY—A-C and D-C arc welders. Forney Mfg. Co., Fort Collins, Colorado.
"41" NICKEL—For welding of pure nickel. International Nickel Co., Inc., New York, N. Y.
"43" MONEL—For welding heavy sections of Monel for acid pickling service. International Nickel Co., Inc., New York, N. Y.
FORTY-FIVERS—Clamps. Detroit Stamping Co., Detroit, Mich.
"400"—Power hack blades. E. C. Atkins Co., Indianapolis, Ind.
FRANK—Leggins and spats. Safety Clothing & Equip. Co., Cleveland, Ohio.
FRANKLIN—A-C welder. Franklin Transformer Manufacturing Co., Minneapolis, Minn.
FREE FLOW—Brazing flux. General Welding & Equipment Co., Boston, Mass.
FREE WHEELING—Ratchet. Blackhawk Mfg. Co., Milwaukee, Wis.
FREE-FLO—Cast iron welding rods. Atlas Foundry Co., Cleveland, Ohio.
FREEMACHINE WELD—Cast iron welding electrodes. Westinghouse Electric Corp., E. Pittsburgh, Pa.
FRE-FLO ALLOY NO. 7—Cast iron rods for high pressure welding. Atlas Foundry Co., Cleveland, Ohio.
FRE-FLO MOLY-NICKEL—Cast iron alloy welding rods. Atlas Foundry Co., Cleveland, Ohio.

FRESHAIR—Air supplied weld helmets. Fibre-Metal Products Co., The, Chester, Pa.
FRICTIONLESS—Babbitt metal. Federated Metals Div., American Smelting & Refining Co., New York, N. Y.
FRIGICAP—Helmet liners for head and ears. Jackson Products, Inc., Warren, Mich.
FRIGID-ARC—Electrode coating. Eutectic Welding Alloys Corp., Flushing, N. Y.
FRIGID WELD ROD—Welding rods. Eutectic Welding Alloys Corp., Flushing, N. Y.
FRIX—Special Eutec rod for machinable wear—resistant overlays. Eutectic Welding Alloys Corp., Flushing, N. Y.
FROGALLOY—Hard surfacing electrode. McKay Co., Pittsburgh, Pa.
FRONTENAC—A-C arc welders. Canadian Liquid Air Co., Ltd., Montreal, Que., Canada.
FROSTRODE—Coolant coolers. Frostrode Div. of Viking Products, Detroit, Mich.
FULLBACK WELDER—Leather welding gloves. E. J. Streichert, Chicago, Ill.
FUL-VUE—Goggles. American Optical Company, Southbridge, Mass.
FUMELESS WELDING ROD NO. 240—Fumeless bronze welding rod. Mueller Brass Co., Port Huron, Mich.
FURNAS-CRETE—Castable refractory. Mexico Refractories Co., Mexico, Mo.
FUSERITE—Welding and cutting torches, cutting machines and specialties. Harris Sales Co., Lansdowne, Pa.
FUSE-WELL—Cast iron rods and electrodes. Chicago Hardware Foundry Co., North Chicago, Ill.
FUSIONETTE—Spot and stud welders. Primeweld Corp., Detroit, Mich.
FUSION SOLDER—Solder. Fusion Engineering Co., Cleveland, Ohio.
FUZEE—Metals and parts cleaner. Turco Products, Inc., Los Angeles, Cal.
FUZON—Alloy welding electrodes. Chicago Steel and Wire Co., Chicago, Ill.

G

GB—Silver brazing fluxes and alloys. Goldsmith Bros. Smelting & Refining Co., Chicago, Ill.
G ELECTROLON—Grinding wheels. Simonds Abrasive Co., Philadelphia, Pa.
G-STRIPPER—Metal cleaner. Kelite Products, Inc., Los Angeles, Calif.
G-E—Electric arc-welding machines, X-ray machines, electrodes, and accessories. General Electric Co., Schenectady, N. Y.
G.M.C.—Resistance type welder. Guyan Machinery Co., Logan, W. Va.
G.M.C.—Welding torches. The Harris Calorific Co., Cleveland, Ohio.
G-R—Arc welders of the transformer type. Glenn-Roberts Co., Indianapolis, Ind.
GS—Safety clothing and equipment. General Scientific Equipment Co., Philadelphia, Pa.
GALV-KOTE—Galvanizing compounds. George H. Ohmer, Dayton, Ohio.
GALV-WELD—Galvanizing compound and aluminum, magnesium solder. Galv-Weld, Inc., Dayton, Ohio.
GALVALLOY—Galvanizing compound. Metalloy Products Co., Los Angeles, Calif.
GARALUN—Abrasives. Armour & Co., Coated Abrasives Div., Chicago, Ill.
GAR-BRO—Cylinder truck. Gar-Bro. Mfg. Co., Los Angeles, Calif.
GARDSMAN—Leather safety clothing and supplies. Racine Glove Co., Racine, Wis.
GARDWELL—Safety clothing and equipment. Safety Clothing & Equipment Co., Cleveland, Ohio.
GARIBAY—Mechanical welding cable connector. Yarco Distributors, Los Angeles, Calif.
GARIBAY STINGER—Arc welding electrode holder. Garibay Mfg Co., Montebello, Calif.
GARIBAY 350—Electrode holder. Garibay Mfg. Co., Montebello, Cal.
GASARC—Inert arc welders and torches. National Cylinder Gas Co., Chicago, Ill.
GAS CARBOX—Bright copper finish welding rod. Central Steel and Wire Co., Chicago, Ill.
GAS FLUX—Liquid brazing flux. Gasflux Mfg. Co., Mansfield, Ohio.
GAS-FLUXER—Unit for dispensing liquid flux into the acetylene line of a gas welding outfit. Gasflux Mfg. Co., Mansfield, Ohio.
GASAVER—Gas economizer. The Harris Calorific Co., Cleveland, Ohio.
GASAVER—Valve device which turns off oxygen and acetylene when torch is hung on hook lever. Weldit Acetylene Co., Detroit, Mich.
GASO KUT-MOR—Flame cutting machine. Gaso Equipment Co., Chicago, Ill.
GAS-O-DOME—Regulator. Victor Equipment Co., San Francisco, Calif.
GAS-O-GEN—Acetylene generator. Eutectic Welding Alloys Corp., Flushing, N. Y.
GAS SAVER—Inert-gas welding equipment. Electron-Arc, Inc., Lynn, Mass.
GASTON—Portable gun welder. Karma Mfg. Co., Harvey, Ill.
GASTON BULL-DOG—Portable electric tools. Alcasco Fdry. & Mfg. Co., Inc., Harvey, Ill.
GASWELD—Welding and cutting torches, regulators and accessories. Wall Chemicals Div., The Liquid Carbonic Corp., Chicago, Ill.
GASWELD—Gas regulators, soldering outfits, flame cutting, soldering and gas welding tips, brazing, preheating, welding and flame cutting torches, welding and cutting apparatus and flame hardening equipment. Liquid Carbonic Corp., Industrial Gas. Div., Chicago, Ill.
GEAR-DRIVEN—Welding positioner. Aronson Machine Co., Arcade, N. Y.
GELLID—Welding Equipment, cylinders and trucks. Gellid Engineering Corp., Oak Park, Ill.
GEM—Electrode holder for arc welding. Gem Electrode Holder Co., New York, N. Y.
GENCO—Plumbers furnace. General Propane Gas Corp., Mineola, N. Y.
GENERAL—Electric arc welder. American Welder Mfg. Co., Chicago, Ill.
GENERAL—Toggle clamps; welding positioner. The General Welding Co., Cleveland, Ohio.
GENERAL PURPOSE—Plugs and receptacles. Pyle-National Co., Chicago, Ill.
GENEX—Arc welding electrode. Metal & Thermit Co., New York, N. Y.
GENUINE STILLSON—Pipe wrench. Walworth Co., New York, N. Y.
GES—Electric hand shears. Jefferson Engineering & Mfg. Co., Detroit, Mich.
GES-9—Electric hand shears, 14 gauge. Jefferson Eng. & Mfg. Co., Detroit, Mich.
GES-12—Electric hand shears, 12 gauge. Jefferson Eng. and Mfg. Co., Detroit, Mich.
GEWECO—Welding and cutting apparatus and automatic shape cutting machines. General Welding and Equipment Co., Boston, Mass.
GLAREGARD—Lenses. Dockson Corp., Detroit, Mich.
GLASCOTE—Transparent liquid coating. John C. Dolph Co., Newark, N. J.
GLAZE-ITE—Cover glass. Willson Products, Inc., Reading, Pa.
GLENN CONSTANT VOLTAGE—Power supply for automatic welding. Glenn Co., Oakland, Calif.
GLENROCK—Welders & chippers lenses. Glendale Optical Co., Inc., Copiague, N. Y.
GLOBE DRILL—Steel. Firth Sterling Steel & Carbide Corp., McKeesport, Pa.
GLOBEIRON—High-purity, low carbon ingot iron tubing. Globe Steel Tubes Co., Milwaukee, Wis.
GLO-MELT—Soldering unit. Wasco Electric Products Corp., Joliet, Ill.
GLOWELD—Welded stainless steel tubes. Globe Steel Tubes Co., Milwaukee, Wis.
GLYPTAL—Synthetic resin. General Electric Co., Schenectady, N. Y.
GOLDEN HEET MASTER—Heat and flame resistant gloves. Singer Glove Mfg. Co., Chicago, Ill.
GOODRICH, B. F.—Welding, fire, steam and sandblast hose. B. F. Goodrich Co., Akron, Ohio.
GOODYEAR—Welding hose. Goodyear Tire & Rubber Co., Akron, Ohio.
GORHAM HIGH SPEED WELDING METAL—Tool steel welding rod. Gorham Tool Company, Detroit, Mich.
GORTITE—Sleeves for welding positioner and machinery. A & A Mfg. Co., Milwaukee, Wis.
GOSS—Adaptors, electrode holders, couplings and fittings, manifolds and oxygen tips, welding gas, etc. Goss Gas, Inc., Pittsburgh, Pa.
GRADIATION—Heating equipment. Selas Corp. of America, Philadelphia, Pa.
GRAHAM—Rotary files. Graham Rotary File & Tool Corp., Philadelphia, Pa.
GRAHAM—Stud and tube welders, processed tip studs and cable connectors. Graham Mfg. Corp., Ferndale, Mich.
GRAHAM-WELD—Stud welders. Graham Mfg. Corp., Ferndale, Mich.
GRAMPUS—Welders vise. Belmont Abrasives, Boston, Mass.
GRAND—"C" clamps, shop caddys and fork-lift-stackers. Grand Specialties Co., Chicago, Ill.
GRANNYGRIP—Chain sling. The Boyer-Campbell Co., Detroit, Mich.
GRAYDAC—Electrode. Champion Rivet Company, Cleveland, Ohio.
GRAY DEVIL—Mild steel electrodes. Champion Rivet Co., Cleveland, Ohio.
GREENLEE—Benders, conduit, pipe and tubing. Greenlee Tool Co., Rockford, Ill.
GREEN-STRIPE—Sandpaper. Clover Mfg. Co., Norwalk, Conn.
GREYCO—Electric drills. Greyhound A.C. Arc welder Corp., Brooklyn, N. Y.
GREYHOUND—A-C arc welders, portable, bench and stationary spot welders. Greyhound A-C Arc Welder Corp., Brooklyn, N. Y.
GRIFFIN—Hack saw blades and band saws. G. W. Griffin Co., Franklin, N. H.
GRINDAWAY—Grinding wheels. Colonial Abrasive Products Co., Conshohocken, Pa.
GRINDHOG—Portable grinders. The Hisey-Wolf Machine Co., Cincinnati, Ohio.
GRIND-O-FLEX—Flexible abrasive finishing wheel. Merit Products Inc., Culver City, Calif.
GRINNELL—Welding fittings and prefabricated piping. Grinnell Co., Inc., Providence, R. I.
GRINNELL-SAUNDERS—Air line valves. Grinnell Co., Inc., Providence, R. I.
GRIPCO—Weld and lock nuts. Grip Nut Co., Chicago, Ill.
GRIP-LOK—Grinding wheels. Safety Grinding Wheel and Machine Co., Springfield, Ohio.
GRIP-MASTER—Drill press vise. National Machine Tool Co., Racine, Wis.
GRIP-O-MATIC—Pullers, gear, bearing, etc. Owatonna Tool Co., Owatonna, Minn.
GRIPPO-HANDLE—Hand drill. The United States Electrical Tool Co., Cincinnati, Ohio.
GRIPSO—Vise pliers. H. R. Bestord Co., San Francisco, Calif.
GRIP-TITE—Brush holder for brush attached to chipping hammer. Atlas Welding Accessories Co., Ferndale, Mich.
GRITCLOTH—Sanding fabric. Bay State Abrasive Products Co., Westboro, Mass.
GROUZABAR—Bar for rebuilding grouzers on crawler equipment. Pyramid Steel Co., Cleveland, Ohio.
GUARDENE—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
GUARDENE SODA-ACID RECHARGER—Fire extinguisher recharger. Pyrene Manufacturing Co., Newark, N. J.
GUARDSMAN—Attachment which can be placed upon a single stage oxygen regulator to make it operate in two stages of reduction. K-G Equipment Co., Inc., New York, N. Y.
GUILLOTINE—Portable hydraulic hand, air and electrically operated wire rope, rod, chain and electric cable cutters. Manco Mfg. Co., Bradley, Ill.
GUYAN—Bandwelder. Guyan Machinery Co., Logan, W. Va.
GWECO—Resistance welding transformers. Goodrich Welding Equipment Corp., Reed City, Mich.

H

H—Aluminum flux. Bierman-Everett Foundry Co., Irvington, N. J.
HF-40—Martensitic iron hard facing rod. American Manganese Steel Division, American Brake Shoe Co., Chicago Heights, Ill.
H.F.M. 600—Hard facing manganese electrodes. Industrial Overlay Metals, Inc., Eaton, Ohio.
HKP—Wire, bolt, rod, chain and cable cutters. H. K. Porter, Inc., Somerville, Mass.
H & M—Pipe cutting and beveling machine. H. & M. Pipe Beveling Machine Co., Tulsa, Okla.
HOCO—Oxygen and acetylene gases compressed in cylinders. Houston Oxygen Co., Houston, Texas.
HPM—Hydraulic presses including presses for electrode extrusion coating. Hydraulic Press Mfg. Co., Mt. Gilead, Ohio.
H. V. BLUE CHIP—Steel. Firth Sterling Steel & Carbide Corp., McKeesport, Pa.
H. W. D.—Chromium-molybdenum hot-work die steel. Firth-Sterling Steel & Carbide Co., McKeesport, Pa.
HACKNEY—Compressed gas cylinders and air receivers. Pressed Steel Tank Co., Milwaukee, Wis.
HALLOWELL—Steel work benches, stools and chairs. The Standard Pressed Steel Co., Jenkintown, Pa.
HALO-ARC—Modern Welding Machine & Equip. Co., N. Y., N. Y.
HALO—Face shields. United States Safety Service Co., Kansas City, Mo.
HAMILTON—Bench type drilling machines and welding tables. The Hamilton Tool Co., Hamilton, Ohio.
HAMMETT—A-C arc welders. Hammett Electric Mfg. Co., Kansas City, Mo.
HAMPTON—A-C electric welders, electrode holders, portable electric saws, etc. Hampton Electric Mfg. Co., New Kensington, Pa.
HANCO—Vises. Wilton Tool Mfg. Co., Chicago, Ill.
HANCOCK—Globe, angle and gate valves. Manning, Maxwell & Moore, Inc., Bridgeport, Conn.
HANDEE—Electric grinders. Chicago Wheel Mfg. Co., Chicago, Ill.
HANDIWINCH—Hoist, hand and power. American Hoist & Derrick Co., St. Paul, Minn.
HANDNIB — Shears, nibblers, rod cutters and punches. National Machine Tool Co., Racine, Wis.
HAND-O-MATIC—Welding electrode. Eutectic Welding Alloys Corp., Flushing, N. Y.
HANDY—Silver solder. Handy & Harman, New York N. Y.
HANDY—Drill press vise. National Machine Tool Co., Racine, Wis.
HANDY FLUX—Flux for silver alloy brazing. Handy & Harman, New York, N. Y.
HANDY-GIANT—Lightweight portable welder. Cauhorn Mfg. Co., Detroit 4, Mich.
HANNA—Air and hydraulic cylinders and valves. Hanna Engrg. Works, Chicago, Ill.
HARCAST—A-C, D-C mild steel electrode for welding cast iron. Harnischfeger Corp., Milwaukee, Wis.
HARDCHROME—A-C, D-C chromium electrodes. Harnischfeger Corp., Milwaukee, Wis.
HARCOTE—Electrodes for hard-facing. Harnischfeger Corp., Milwaukee, Wis.
HARD DEVIL—Hard surfacing electrode. The Champion Rivet Co., Cleveland, Ohio.
HARDALLOY—Hard surfacing electrode. McKay Co., Pittsburgh, Pa.
HARD-CRAFT—Electrodes. Allied Weld-Craft, Inc., Indianapolis, Ind.
HARDENTOUCH—Hard facing electrodes. Westinghouse Electric Corp., East Pittsburgh, Pa.
HARD-NITE—Hard facing metal. Eid Metal Co., Ltd., Los Angeles, Calif.
HARDFACER NO. 11 AND NO. 112—Coated type electrodes for hard-facing. Hobart Bros. Co., Troy, Ohio.
HARDWELD—Hardsurfacing electrode. The Lincoln Electric Co., Cleveland, Ohio.
HARGRAVE—"C" clamps, cold chisels and other small hand tools. The Cincinnati Tool Co., Cincinnati, Ohio.
HARMONANG A—Coated manganese molybdenum electrode. Harnischfeger Corp., Milwaukee, Wis.
HARRIS—Welding and cutting equipment, torches, regulators and accessories. Harris Calorific Co., Cleveland, Ohio.
HARRISBURG—Oxygen cylinders, flanges. Harrisburg Steel Corp., Harrisburg, Pa.

HARSTAIN—A-C, D-C electrodes for welding stainless steels. Harnischfeger Corp., Milwaukee, Wis.
HARTUNG—Coated tungsten molybdenum electrode. Harnischfeger Corp., Milwaukee, Wis.
HAR-WORTH—Electrode holders, ground clamps and cable connectors. Har-Worth Mfg. Co., Newark, N. J.
HASCROME—Iron-base hard facing rods. Haynes Stellite Co., New York, N. Y.
HASKINS—Flexible shaft equipment. R. G. Haskins Co., Chicago, Ill.
HASTELLOY—Nickel-base hard facing rods. Haynes Stellite Co., New York, N. Y.
HAT 'N' GOGS—Safety hats and goggles. Chicago Eye Shield Co., Chicago, Ill.
HAT 'N' SHIELD—Safety hats and helmets. Chicago Eye Shield Co., Chicago, Ill.
HARD-N-TUFF—Steel hardening compound. Doughty Laboratories, N. Y.
HAUCK—Oil and gas burning torches, furnaces and firepots. Hauck Manufacturing Co., Brooklyn, N. Y.
HAYES—Alloys and precision castings. Haynes Stellite Co., New York, N. Y.
HAYES—Torch machines. Hayes Track Appliance Co., Richmond, Ind.
HAYNES—Iron & nickel-base hard facing rods. Haynes Stellite Co., New York, N. Y.
HAYNES STELLITE—Cobalt-base hard facing rods. Haynes Stellite Co., New York, N. Y.
HAYSTELLITE—Cast tungsten carbide hard facing material. Haynes Stellite Co., New York, N. Y.
HAZACORD—Welding cable. Hazard Insulated Wire Works, (Division of the Okonite Co.,) Wilkes-Barre, Pa.
HEAD-REST—Goggles. Jackson Products, Warren, Mich.
HEALTHGUARD—Chicago Eye Shield Co., Chicago, Ill.
HEARTHCRETE—Cement refractory. Quigley Co., Inc., New York, N. Y.
HEAT-FOE—Asbestos gloves. Miller Products Co., Inc., New York 7, N. Y.
HEAVY-DUTY—Ground clamps. Wagner Manufacturing Co., Inc., Jackson, Mo.
HEBARD—Towing Tractors. The Bude Co., Harvey, Ill.
HELIARC—Tig (tungsten inert-gas) welding apparatus. The Linde Air Products Co., New York, N. Y.
HELI-MASTER—The Osborn Mfg. Co., Cleveland, Ohio.
HELISTAIN—Welding flux. Sierra Welding Flux Co., Temple City, Calif.
HELIWELD—Tig (Tungsten inert-gas) welding equipment. Air Reduction Sales Co., New York, N. Y.
HELLER—Chisels, chipping and scaling and machinists hammers, handles, holders and steel. Heller Brothers Co., Newark, N. J.
HELLITE—Refractory cement. Johns-Manville, New York, N. Y.
HEMATOX—Cast Iron flux. Canadian Liquid Air Co., Ltd., Montreal, Que., Canada.
HERC-ALLOY—Hoisting chains. Columbus McKinnon Chain Corp., Tonawanda, N. Y.
HERCO—A-C transformer type arc welders. Hercules Electric & Mfg. Co., Inc., Brooklyn, N. Y.
HERCULES—Solder flux and paste, iron cement, boiler solder. Hercules Chemical Co., Inc., New York, N. Y.
HERCULES—Copper coated low carbon steel welding rod. Canadian Liquid Air Co., Ltd., Montreal, Que., Canada.
HERCULES—Gasoline, gas, kerosene and Diesel engines. Hercules Motors Corp., Canton, Ohio.
HERCULES—Split shaft power take-off. Hercules Steel Products Co., Galion, Ohio.
HERCULITE—Welding helmets. Dockson Corp., Detroit, Mich.
HERCULOY—Silicon bronze welding rods. Revere Copper and Brass, Inc., New York, N. Y.
HERO—Hose. Mulconroy Co., Philadelphia, Pa.
HEVI-DUTY—Furnaces. Hevi-Duty Electric Co., Milwaukee, Wis.
HEVI-LIFT—Electric hoist. Harnischfeger Corp., Milwaukee, Wis.
HEVIKOAT—Heavily flux coated, shielded arc type steel electrode. The Universal Welding Co., Cleveland, Ohio.
HEVY-DUTY—Head stamps. The Acromark Co., Elizabeth, N. J.
HEXACON—Electric soldering and branding irons. Hexacon Electric Co., Roselle Park, N. J.
HEXITE—Steel used in making nugget wrenches. Blackhawk Mfg. Co., Milwaukee, Wis.
HICKORY—File handles. O. P. Link Handle Co., Salem, Ind.
HI-BAK—Welders gloves. Boss Mfg. Co., Kewanee, Ill.
HI-CYCLE—High frequency unit. Will-Weld Manufacturing Co., Inc. Omaha, Neb.
HICYCLE—Grinders and sanders. Chicago Pneumatic Tool Co., New York, N. Y.
HI-AMP—Ground clamps electrode holder. Wagner Mfg. Co., Inc., Jackson, Mo.
HI-DUTY—Soldering outfits. Imperial Brass Manufacturing Co., Chicago, Ill.
HI-LO—A.C. welding machines. HiLo Mfg. Co., Detroit, Mich.
HILO-CHROME—Bonding mortar. Mexico Refractories Co., Mexico, Mo.
HI-MO—High speed steel bits. Firth-Sterling Steel & Carbide Corp., McKeesport, Pa.
HI-POWER—Portable electric drills and grinders. Portable Electric Tools, Inc., Chicago, Ill.
HI-SPEED—Oxy-acetylene welding and cutting torches. Dockson Corp., Detroit, Mich.
HI-SPEED—Grinding compounds. Clover Manufacturing Co., Norwalk, Conn.
HI-STEEL—Low alloy steel. Inland Steel Co., Chicago, Ill.
HI-TEN—Carbon steel wrenches. Armstrong Bros. Tool Co., Chicago, Ill.
HI-TENSILE—Coated electrodes. Page Steel & Wire Division of American Chain and Cable Co., Inc., Monessen, Pa.
HI-TEST—Non-fuming flux. Air Reduction Sales Company, New York, N. Y.
"HI-WAVE"—Spot welders of condenser discharge type. Taylor-Winfield Corp., Warren, Ohio.
HICARWELD—High carbon steel welding rod. Steel Sales Corp., Chicago, Ill.
HICYCLE—Grinders. Chicago Pneumatic Tool Co., New York, N. Y.
HIGH SPEED—Tinning flux. E. I. du Pont de Nemours & Co., Grasselli Chem. Div., Wilmington, Del.
HIGH VISIBILITY—Protective lens. Lincoln Electric Co., Cleveland, Ohio.
HILOSET—Bonding mortar. Mexico Refractories Co., Mexico, Mo.
HISEY—Grinders and buffers. Hisey-Wolf Machine Co., Cincinnati, Ohio.
HOBART—A-C and D-C arc welding machines, electrodes and equipment, D.C. welding equipment, electric, gas engine driven and diesel engine driven; mobile D.C. welder; battery charger; clean-weld compound; metal filler, etc Hobart Bros. Co., Troy, Ohio.
HOBART NO. 111 H. T.—Shielded arc type electrode. Hobart Brothers Co., Troy, Ohio.
HOBART NO. A. C. 77—Electrode. Hobart Brothers Co., Troy, Ohio.
HOBART NO. 55—Heavy coated electrode. Hobart Brothers Co., Troy, Ohio.
HOBART AC 55—Electrode. Hobart Brothers Co. Troy, Ohio.
HOBART NO. 77—A-C electrode. Hobart Brothers Co., Troy, Ohio.
HOBART NO. 111—Shielded arc type electrode. Hobart Brothers Co., Troy, Ohio.
HOBART NO. 885—Electrode for shielded arc welding. Hobart Bros. Co., Troy, Ohio.
HOBART STAINLESS NO. 308, 309, 310, 347—Electrode for welding chrome nickel alloys. Hobart Bros. Co., Troy, Ohio.
HOBART STAINLESS NO. 316—Electrode for welding chrome-nickel moly. Hobart Bros. Co., Troy, Ohio.
HOBART STAINLESS NO. 330—Electrode for stainless steel. Hobart Bros. Co., Troy, Ohio.
HOBART ALUMINUM—Electrode aluminum. Hobart Brothers Co., Troy, Ohio.
HOBBY—Steel tape rule. Carlson & Sullivan, Inc., Monrovia, Calif.
HOBRONZ—Electrode for carbon arc. Hobart Brothers Co., Troy, Ohio.
HOCO—Oxygen, acetylene, nitrogen, and medical gas mixtures. Houston Oxygen Co., Houston, Tex.
HOIST-ALL—Ratchet level all purpose hoist, high lift jack and puller. Coffing Hoist Co., Danville, Ill.
HOKE—Torches, regulators, valves, laboratory and other equipment. Hoke, Inc., Englewood, N. J.
HOKE—JEWEL—Oxy-gas torches. Hoke, Inc., Englewood, N. J.
HOKE-PHOENIX—Regulators or reducing valves for compressed gases. Hoke, Inc., Englewood, N. J.
HOLDEN FLUX—Silver brazing flux. Standard Supply Co., New Haven, Conn.
HOL-GRIP—Metallic electrode holders. Tweco Products Co., Wichita, Kan.
HOL-TITE—Electrode holder. Hol-Tite Holder Co., West Frankfort, Ill.
HOLCOMB PROTECTION—Welders' safety garments. Holcomb Safety Garments Co., Chicago, Ill.
HOLCROFT—Furnaces. Holcroft & Co., Detroit, Mich.
HOLD-ARK—Carbon electrodes. Speer Carbon Co., St. Marys, Pa.
HOL-GRIP—Electrode Holders, Tweco Products Co., Wichita, Kansas
HOLGUN—Portable electric drills. Van Dorn Electric Tool Co., Towson, Md.
HOLGUN—Portable electric drill. The Black & Decker Mfg. Co., Towson, Md.
HOLLANDS—Pipe cutters wheels, etc. Collmer Bros., South Bend, Ind.
HOLLANDS—Bench, combination pipe and machinists vises and pipe cutters. Hollands Mfg. Co., Erie, Pa.
HOLLOW KINGPIN—Positioner. The Pandjiris Weldment Co., St. Louis, Mo.
HOLLUP—Electrodes. National Cylinder Gas Co., Chicago, Ill.
HOLMES—Submerged arc flux crusher. Robert Holmes & Bros. Inc., Danville, Ill.
HOLTITE—Granulated bronzing material. The American Brass Co., Waterbury, Conn.
HOMOX—Acetylene and Oxygen gases. Home Oxygen Co., Inc., Huntington Park, Cal.
HOOF—Governors: mechanical; velocity. Hoof Products Co., Chicago, Ill.
HOOSIER—Files. E. C. Atkins and Co., Indianapolis, Ind.
HOPANE—A liquefied gas. Hope Natural Gas Co., Clarksburg, W. Va.
HORNET—AC arc welder. Air Reduction Sales Co., New York, N. Y.
HOT SPARK—Torch lighter and flints. Randall Manufacturing Co., North Kansas City, Mo.
HOT SPOT—Spot, seam and projection welder and resistance welding equipment. Acme Electric Welder Co., Los Angeles, Cal.
HOT SPOT—Flint equipped gas lighter. Universal Power Corp., Cleveland, Ohio.
HOTMARX—Metal marking crayons. The Amer. Crayon Co., Sandusky, Ohio.
HOUGHTO-CLEAN—Metal cleaners and rust removers. E. F. Houghton & Co., Philadelphia, Pa.
HULTGREN—Power furnaces. Ajax Electrothermic Corp., Div., Ajax Metal Co., Philadelphia, Pa.
HUNTINGTON PATTERN—Grinding wheel dressers. Collmer Bros., South Bend, Ind.
HUNTSMAN—Welding helmets, hand and face shields. Kedman Co., Salt Lake City, Utah.
HURBENIUM—Lead alloy coating. Hurbenium Co., Napoleon, Ohio.
HURRICANE PRESS—Air operated bench press. Studebaker Machine Co., Maywood, Ill.
HUSKY BOY—Gas Drive Arc Welder, Air-Cooled. Hobart Bros. Co., Troy, Ohio
HY POWA—Wire, bolt, rod, chain and cable cutters. H. K. Porter, Inc., Somerville, Mass.
HYCARB—High carbon welding electrode. Universal Power Corp., Cleveland, Ohio.
HYCLASP—Welding cable disconnect splice. Burndy Engineering Co., Inc., Norwalk, Conn.
HYDENT—Cable connectors. Burndy Engineering Co., Inc., Norwalk, Conn.
HYDRAIR—Drilling unit. Bellows Co., Akron, Ohio.
HYDRO-CLONE—Dust suppressors. Whiting Corp., Harvey, Ill.
HYDROGARDE—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
"HYDRO-SPEED"—Multiple point spot welders. The Taylor-Winfield Corp., Warren, Ohio.
HYLINK—Cable connectors. Burndy Engineering Co., Inc., Norwalk, Conn.
HYLUG—Cable connectors. Burndy Engineering Co., Inc., Norwalk, Conn.
HY-LO—Low hydrogen electrodes. The Champion Rivet Co., Cleveland, Ohio.
HYMAG—Magnesium silicate; Foote Mineral Co., Philadelphia, Pa.
HY-POWER—Electrically powered, hydraulically actuated equipment. Hannifin Corp., Chicago, Ill.
HYPRESS—Crimping tool. Burndy Engineering Co., Inc., New York, N. Y.
HY-PRESSURE—Welding hose. Goodyear Tire & Rubber Co., Akron, Ohio.
HYTEMP—Protective coatings. Geo. R. Mowat Co., New York, N. Y.
HYTEMPITE—High temperature refractory cements. Quigley Co., Inc., New York, N. Y.
HY-TIN—Paste solder. Farreloy Co., Philadelphia, Pa.
HYTOOL—Crimping tool. Burndy Engineering Co., Inc., New York, N. Y.

I

I-O-C—Oxygen acetylene. Indiana Oxygen Co., Indianapolis, Ind.
I-R-C—Lightweight castable refractory. Mexico Refractories Co., Mexico, Mo.
IDEAL—Various electrical items and tools. Ideal Industries, Inc., Sycamore, Ill.
IDEAL—Face shield and lens. Ideal Face Shield Co., Columbus, Ohio.
IDEAL—Welders' handshields. Welding Engineering Corp., Milwaukee, Wis.
IDEALARC—All-purpose a-c/d-c welder. The Lincoln Electric Co., Cleveland, Ohio.
IGNITRON—Timing equipment for resistance welding machines. Westinghouse Electric Corp., East Pittsburgh, Pa.
ILG—Centrifugal and motor propeller fans, power roof ventilators, automatic shutters and unit heaters. ILG Electric Ventilating Co., Chicago, Ill.
ILLIUM—Corrosion resistant electrodes and welding rods. Illium Corp., Freeport, Ill.
IMMUNITE—Welding lenses and plates. Harry Buegeleisen Inc., Brooklyn, N. Y.
IMMUNOL—Metal cleaner and rust preventative. Haas Miller Corp., Philadelphia, Pa.
IMPACTOOL—Electric Tool. Ingersoll-Rand Co., New York, N. Y.
IMPACUTTER—Power cutter. Ingersoll-Rand Co., New York, N. Y.
IMPERIAL—Welding gloves. Imperial Glove Mfg. Co., Berlin, Wis.
IMPERIAL—Welding, cutting and soldering equipment. Imperial Brass Manufacturing Co., Chicago, Ill.
IMPERSO TANKHEATER—Tank heater. Eclipse Fuel Engineering Co., Rockford, Ill.
IMPROVED OVAL CAP—Torch lighter. Flint Products Co., Brooklyn, N. Y.
IMPROVED ROUND FILE—Welding torch gas lighters. Safety Gas Lighter Co., Lynn, Mass.
INCANDESCENT INTENSIFIER—Welding and inspection lamps. Benjamin Electric Mfg. Co., Des Plaines, Ill.
INCANDESCENT PROJECTOLITE—Welding and inspection lamps. Benjamin Electric Mfg. Co., Des Plaines, Ill.
IN-CEL-ATE—Insulating cement. Mexico Refractories Co., Mexico, Mo.
INCO—All products of the International Nickel Co. International Nickel Co., Inc., New York, N. Y.

INCO-FLUX—Gas welding and brazing flux. International Nickel Co., Inc., New York, N. Y.
INCONEL—77-15 nickel-chromium alloy. The International Nickel Co., Inc., New York, N. Y.
INCONEL-CLAD STEEL—Steel plate composed of a layer of solid Inconel. Lukens Steel Co., Coatesville, Pa.
INDEPENDENT — Acetylene cylinders, acetylene charging or compressing plants, oxygen plants; equipment and fittings of all kinds used in the compression of oxygen, acetylene, propane or other gases. Independent Engineering Co., O'Fallon, Ill.
INDESTRUCTO—Neoprene sheathed cables. National Elec. Products Corp., Pittsburgh, Pa.
INDIANA—Oxygen, acetylene. Indiana Oxygen Co., Indianapolis, Ind.
INDUSTRIAL 38—Metal cleaners. Wyandotte Chemical Corp., Wyandotte, Mich.
INDUSTRIALAIR—Compressor. Joy Mfg. Co., Pittsburgh, Pa.
INDUSTRIAL CRANE—Overhead cranes, jibs and gantrys. Industrial Equipment Co., Chicago, Ill.
INDUSTRIAL SAFETY APPAREL—Safety clothing without steel reinforcing. Industrial Gloves Co., Danville, Ill.
INDUSTRO—Welding glass. Willson Products, Inc., Reading, Pa.
INGACLAD—Stainless clad steel. Ingersoll Steel & Disc Div., Borg-Warner Corp., Chicago, Ill.
INLAND HI-STEEL—Low alloy, high strength steel. Jos. T. Ryerson & Son, Inc., Chicago, Ill.
INOXCO—Welding and cutting equipment and flame cutting machines. Industrial Oxygen Co., Louisville, Ky.
IN-R-TOOLS—Work holding tools. Layne-Held Corp., Higginsville, Mo.
INSOROD—Self hardening alloy. Resisto-Loy Co., Grand Rapids, Mich.
INSTANT ARC—A.C. welder. Marquette Mfg. Co., Inc., Minneapolis, Minn.
INSTO-GAS—Metal melting furnaces; torches and soldering irons. Insto-Gas Corp., Detroit, Mich.
INSULAG—Refractory and refractory insulation. Quigley Co., Inc., New York, N. Y.
INSUL-LOCK—Cable connectors, cable lugs, cable splicers, crimping tools. Anthony, F. M. Co., Piedmont, Calif.
INSUL-LOCK—Cable splice. Victor Equipment Co., San Francisco, Calif.
INSULUG—Cable connectors. Burndy Engrg. Co., Norwalk, Conn.
INSULCRETE—Refractories. Quigley Co., Inc., New York, N. Y.
INSWELL—Coil chain. Columbus McKinnon Chain Corp., Tonawanda, N. Y.
INTENSARC—Carbon arc welding electrodes. National Carbon Div., Union Carbide & Carbon Corp., New York, N. Y.
INTERLOX—Extension slide rule. Master Rule Mfg. Co., Middletown, N. Y.
INTERMITTOR—High speed index table. Ferguson Machine & Tool Co.,
INVARO—High speed steel. Firth-Sterling Steel & Carbide Corp., McKeesport, Pa.
INVINCIBLE—Industrial vacuum cleaners, flux recovery equipment and vacuum producers and blowers. Invincible Vacuum Cleaner Mfg. Co., Dover, Ohio.
IPCO—Safety equipment, welding accessories and first aid supplies. Industrial Products Co., Philadelphia, Pa.
IRIDIUM ISOTRON—Isotron for handling of Iridium 192. The Gamma Corp., Mansfield, Mass.
IRONLUNG—Roof ventilation. Irong Long Ventilator Co., Cleveland, Ohio.
IRONWELD—Powdered flux for welding cast iron. Sight Feed Generator Co., West Alexandria, Ohio.
IRPO—Rust proofer or preventative. Wolte-Kote Co., Inc., Sheboygan, Wis.
ISCO—Walnut caustic potash. Innis, Speiden & Co., New York, N. Y.
ISOROD—Forgeable self-hardening alloy. Resisto-Loy Co., Grand Rapids, Mich.

J

JM—Asbestos, fire bricks, asbestos safety clothing, refractories. Johns-Manville, New York, N. Y.
JM—Sodium silicate. E. I. duPont de Nemours & Co., Inc., Wilmington, Del.
J. S. CHISEL AND PUNCH STEEL—Oil-hardening punch-and-chisel steel. Firth-Sterling Steel and Carbide Co., McKeesport, Pa.
JACKHAMER—Rock drill. Ingersoll-Rand Co., New York, N. Y.
JACKSON—Insulated and semi-insulated electrode holders and a complete line of adjustable eye-shields and hoods. Jackson Products, Detroit, Mich.
JARVIX BIAX—Flexible shafting, flexible shaft machines and portable grinding machines with flexible shafts. Charles L. Jarvis Co., Middletown, Conn.
JARVIS POWER TOOLS—Flexible shaft equipment and flexible shaft tools and tapping attachments. Charles L. Jarvis Co., Middletown, Conn.
JAY BEE—Fire brick. Mexico Refractories Co., Mexico, Mo.
JEMCO—Flexible shaft machine. Jefferson Engineering & Mfg. Co., Detroit, Mich.
JEMCO "C40"—Hard facing rods. Armite Laboratories, Los Angeles, Calif.
JESSOP STAINLESS-CLAD—Stainless steel. Jessop Steel Co., Washington, Pa.
JET-CUT—Grinding wheels. Robertson Mfg. Co., Morrisville, Pa.
JET FLUX—Liquid flux system. Allstate Welding Alloys Co., Inc., White Plains, N. Y.
JET-GAS—Propane. Burdett Oxygen Co., Cleveland, Ohio.
JET-O-MATIC—Automatic light duty oxyacetylene torch. Marquette Mfg. Co., Inc., Minneapolis, Minn.
JETWELD—Iron-powder electrode. Lincoln Electric Co. Cleveland, Ohio.
JEWEL—Pipe clamps. The Jewel Mfg. Co., St. Paul, Minn.
JEWEL—Coated abrasives. Abrasive Products, Inc., South Braintree, Mass.
JEWEL BRAND WELDISK—Aluminum oxide coated abrasive disc. Made by Abrasive Products, Inc., South Braintree, Mass.
JEWELOX—Coated abrasive in rolls, belts, disc and sheet form. Abrasive Products, Inc., South Braintree, Mass.
JIFFY—Brazing outfits. Modern Engineering Co., Inc., St. Louis, Mo.
JIFFY—Hand torches. Mahr Mfg. Co., Div. Diamond Iron Works Inc., Minneapolis, Minn.
JOHNSON—Metal cutoff bandsaws. Johnson Manufacturing Corp., New York, N. Y.
JOHNSON'S—Soldering fluid, flux and paste. Johnson Mfg. Co., Inc., Mount Vernon, Iowa.
JOMAC—Welding gloves. C. Walker Jones Co., Philadelphia, Pa.
JONES—Abrasive belt swing grinder. Jones Engineering Co., Ellwood City, Pa.
JORGENSEN—Welders clamps, steel bar clamps, "C" clamps, etc. Adjustable Clamp Co., Chicago, Ill.
JUBILEE—Oxy-acetylene hose. New York Belting & Packing Co., Passaic, N. J.
JUMBO—Machine cutting torch and tips. Harris Calorific Co., Cleveland, Ohio.
JUMBO—Round file type spark lighter. Harris Calorific Sales Co. of New York, New York, N. Y.
JUMBO—Torch lighters and flints. Flint Products Co., Brooklyn, N. Y.
JUMBO—Steam hose. The Home Rubber Co., Trenton, N. J.
JUNIOR—A.C. arc welders. Mid-States Welding Mfg Co., Chicago, Ill.
JUNIOR—Portable arc welder. Shober Sales, Inc., Stockton, Calif.
JUNIOR—Soldering gun. Weller Electric Corp., Easton, Pa.
JUNO—Vises. Wilton Tool Mfg. Co., Chicago, Ill.
JUSTRITE—Fire extinguishers. Justrite Mfg. Co., Chicago, Ill.

K

K-G—Welding and cutting torches, accessories, supplies, regulators, etc. K-G Equipment Co., Inc., Allentown, Pa.
KSM—Arc welding studs, electric arc stud welders, parts and accessories. KSM Prod., Inc., Merchantville, N. J.
K-ARC—Electrode coating materials. Foote Mineral Co., Inc., Philadelphia, Pa.
K BOND—Grinding wheel. Norton Co., Worcester, Mass.
K MONEL—Nickel-copper aluminum heat-treatable alloy. The International Nickel Co., Inc., New York, N. Y.
KO—Resistance welding electrode holders. P. R. Mallory & Co., Inc., Indianapolis, Ind.
K SERIES—Welding and brazing alloys and fluxes. All-State Welding Alloys Co., Inc., White Plains, N. Y.
K TUNGSTEN—Special tungsten for inert gas shielded arc welding electrodes. P. R. Mallory & Co., Inc., Indianapolis, Ind.
KAJON—Air actuated C-clamp. The Burklyn Co., Los Angeles, Calif.
KAM KLAMPS—Pressure clamps for use on jigs and fixtures. Lapeer Mfg. Co., Lapeer, Mich.
KAM-LOCK—Shutoff valve. Eclipse Fuel Engineering Co., Rockford, Ill.
KANDEL—Arc-oxygen electric underwater cutting torch. Craftsweld Equipment Corp., Long Island City, N. Y.
KANOX—Acetylene and oxygen. Kansas Oxygen Div., Krause Plow Corp., Hutchinson, Kan.
KAPTRODE—Resistance welding cap electrodes. Weiger, Weed & Co., Detroit, Mich.
KARRI-GO—Industrial crane. Silent Hoist & Crane Co., Brooklyn, N. Y.
KARSEAL—Cast iron solder. All-State Welding Alloys Co., Inc., White Plains, N. Y.
KARTIN—Tinning compound. All-State Welding Alloys Co., Inc., White Plains, N. Y.
KASIL—Potassium silicate and electrode coating materials. Philadelphia Quartz Co., Philadelphia, Pa.
KEEN-ARC—Copper coated and cored carbon electrodes. Becker Bros. Carbon Co., Cicero, Ill.
KEENWELD—Brazing alloys and fluxes. All-State Welding Alloys Co., Inc., White Plains, N. Y.
KELEKET—X-ray equipment. Kelley-Koett Mfg. Co., Covington, Ky.
KELLER—Pneumatic tools. Keller Tool Co., Grand Haven, Mich.
KELLER—Power hack saws. Sales Service Machine Tool Co., St. Paul, Minn.
KELLERFLEX—Flexible shaft machines, burrs, rotary files and equip. Pratt & Whitney (Division Niles Bement-Pond Co.), W. Hartford, Conn.
KELLEY-KOETT—X-ray equipment, accessories and supplies. Kelley-Koett Mfg. Co., Inc., Covington, Ky.
KELLOGG AMERICAN—Air compressors. Kellogg Division of American Brake Shoe Co., Rochester, N. Y.
KENT—Flux recovery unit. The Kent Co., Inc., Rome, N. Y.
KENTRALL—Hardness tester. The Torsion Balance Co., Clifton, N. J.
KERK-ALOY—Hard-facing alloy. Kerk-Aloy Co., Bloomington, Ind.
KEROTEST—Valves, cylinder and piping. Kerotest Manufacturing Co., Pittsburgh, Pa.
KESTER—Solders and fluxes, solder paddles. Kester Solder Co., Chicago, Ill.
KEWANEE—Unions. Walworth Co., New York, N. Y.
KEY-GRAPHITE—Sealing compound. Key Co., E. St. Louis, Mo.
KEYSTONE—Tungsten chisel steel. Henry Disston & Sons, Inc., Philadelphia, Pa.
KEYSTONE—Bench vises. Hollands Mfg. Co., Erie, Pa.
KEYSTONE—Lubricants. Keystone Lubricating Co., Philadelphia, Pa.
KICKLESS—Resistance welding, cables. Mackworth G. Rees, Inc., Detroit, Mich.
KIDDE—Fire extinguishers. Walter Kidde & Co., Inc., Detroit, Mich.
KILOTRON—Induction generator. Electric Arc Inc., Newark, N. J.
KIMBALL—Weldors' aprons, gloves, goggles, helmets, leather suits, leggings, sleeves, metal arm protectors, sweat pads, lens and cover plates. Kimball Safety Products Co., Cleveland, Ohio.
KIMTINT—Welding lenses. Kimball Safety Prod. Co., Cleveland, Ohio.
KINGSPAR—Electrode coating material. Foote Mineral Co., Inc., Philadelphia, Pa.
KINMONT UNIVERSAL POWER UNIT—Welding positioner and power source. Roylyn, Inc., Glendale, Calif.
KIRKSITE A—Die metal alloy. Morris P. Kirk & Son, Inc., Los Angeles, Calif.
KLAMPACTO—Quick acting toggle type "C" clamp. Lapeer Mfg. Co., Lapeer, Mich.
KLEANAIR—Respirators. Safety Equipment Service Co., Cleveland, Ohio.
KLEANROD—Soldering fluxes. E. I. du Pont de Nemours & Co., Grasselli Chemicals Dept., Wilmington, Del.
KLEANWELD—Fluxes for aluminum castings, cast iron, brass and bronze welding of malleable iron, brass or bronze welding of cast iron. K-G Equipment Co., Inc., New York, N. Y.
KLEARSITE KOVERGLAS—Non-pitting coverglass for arc welding hoods, and welding goggles. Carter-Lockard Co., Los Angeles, Calif.
KLEM—Cleaner. Klem Chemicals, Inc., Dearborn, Mich.
KLERO—Packing. Greene, Tweed & Co., North Wales, Pa.
KLING—Shears and presses. Kling Bros. Engineering Works, Chicago, Ill.
KNOCK-OUT—A-C arc welders, arc torches. K. O. Lee Co., Aberdeen, S. D.
KNOLES—Trucks and cylinders. Adams Mfg. & Supply Co., Los Angeles, Calif.
KNU-LOK—Toggle type pliers. Lapeer Mfg. Co., Lapeer, Mich.
KNU-SINE—Bar base toggle-clamps. Lapeer Mfg. Co., Lapeer, Mich.
KNU-VISE—Toggle clamps and pliers. Lapeer Manufacturing Co., Lapeer, Mich.
KODAK—Industrial x-ray films. Eastman Kodak Co., Rochester, N. Y.
KOOLITE—Natl. Welding Equip. Co., San Francisco, Cal.
KOOLPAD—Sweat Bands. Standard Safety Equipment Co., Chicago, Ill.
KOOLPORE—Grinding wheels. Bay State Abrasive Prod. Co., Westboro, Mass.
KOP-R-ARC—Welding rods. Krembs & Co., Chicago, Ill.
KOPPER KORE—Electric soldering iron. Kwikheat Mfg. Co., Glendale, Calif.
KORKER—Oxy-acetylene hose. Quaker Rubber Hose Co., Philadelphia, Pa.
KORN—Leathers. Korn Leather Co., Peabody, Mass.
KORNER-KLAMP—Welding clamp. Thermacote Co., Los Angeles, Calif.
KORR-STUDS—Welding studs. KSM Products, Inc., Merchantville, N. J.
KRAFTGUARD—Goggles. Chicago Eye Shield Co., Chicago, Ill.
KRANEKAR—Mobile swing-boom crane. Silent Hoist & Crane Co., Inc., Brooklyn, N. Y.
KRE-CO—Brazing alloy rings and soldering and welding fluxes. Charles W. Krieg Co., Newark, N. J.
KRESS-McKNEAT—Oil and gas burning appliances, preheaters, forges, torches, and furnaces. H. H. Kress, Philadelphia, Pa.
KROME-KOTE—Rust remover and sealer. Wolte-Kote Co., Inc., Sheboygan, Wis.
KROMEWELD—Flux for welding stainless steels and stainless iron. Air Reduction Sales Co., New York, N. Y.
KROMOVER—Tinning pencil. All-State Welding Alloys Co., Inc., White Plains, N. Y.
KROMOX—Chrome nickel steel rod for oxyacetylene welding. Central Steel & Wire Co., Chicago, Ill.
KUT-KWIK—High speed steel. Henry Disston & Sons, Inc., Philadelphia, Pa.
KUT-MOR—Portable motor driven gas cutting machine. Gaso Equipment Co., Chicago, Ill.

KUTALL—Hack saw blades. Spartan Saw Works, Inc., Springfield, Mass.
KWIKFLUX—Silver brazing fluxes. Special Chemicals Co., New York, N. Y.
KWIK-HEAT—Electric soldering iron. Kwikheat Mfg. Co., Glendale, Calif.
KWIK-HEAT "TYPE 400"—Electric soldering iron. Kwik-heat Mfg. Co., Glendale, Calif.
KWIK-KLAMP—Adjustable clamp. Danly Machine Specialties, Inc., Chicago, Ill.
KYRAM—Refractories. Quigley Co., Inc., New York, N. Y.

L

L NICKEL—Low-carbon form of nickel. International Nickel Co., Inc., New York, N. Y.
L. A. ALUMINUM BRAZING FLUX TYPE I—Aluminum brazing flux. Canadian Liquid Air Co., Ltd., Montreal, Canada.
LP—Farm mixing low pressure gas and air. Eclipse Fuel Engineering Co., Rockford, Ill.
L-T-B-50—Plastic head rest spectacle. Jackson Products Co., Detroit, Mich.
LWZ—Line arc magnetic contactors. The Electric Controller & Manufacturing Co., Cleveland, Ohio.
LACLEDE-CHRISTY—Fire brick and refractories. Laclede-Christy Co., St. Louis, Mo.
LA-CO—Paste solders. Lake Chemical Co., Chicago, Ill.
LADY'S MAN—Steel tape rule. Master Rule Mfg. Co., Middletown, N. Y.
LAPEER—Toggle action clamps and pliers and "C" clamps. Lapeer Mfg. Co., Detroit, Mich.
LARKIN—A-C welders. Resistance spot, butt, seam, flash and projection welders and gun welders, arc torch, welder's protective cloth and accessories. Larkin Welder & Machine Corp., Brooklyn, N. Y.
LAY-RITE—Hard surfacing metal. Eld Metal Co., Ltd., Los Angeles, Calif.
LAY-SET—Performed wire rope. Hazard Wire Rope Div., of Amer. Chain & Cable Co., Inc., Wilkes-Barre, Pa.
LEADER—Automatic AC electric welder. Leader Welder & Mfg. Co., Berkeley, Calif.
LEAK-PRUF—Acid Core Solder. Alpha Metals Inc., Jersey City, N. J.
"LEAK-TEC"—American Gas & Chemicals, Inc., N. Y., N. Y.
LECTRO-SHEAR—Electrically operated shear. Black and Decker Mfg. Co., Towson, Md.
LEDLOY—Lead bearing, open hearth steel. Inland Steel Co., Chicago, Ill.
LE-HI—Clamps, couplings, fitting unions and valves. Hose Accessories Co., Phila., Pa.
LEJAY—D-C arc welders and electric brazing outfits. Lejay Mfg. Co., Minneapolis, Minn.
LENAPE RED MAN—Seamless forged welding necks, Sweep type boiler nozzles, eliptical handhole and manhole saddles, rings and fittings, special press-formed members for welded constructions in pressure vessels, machinery and transportation equipment. Lenape Hydraulic Pressing & Forging Co., West Chester, Pa.
LENCO—High temperature Cement. Wagner Mfg. Co., Inc., Jackson, Mo.
LEVOLIER—Electric switches. McGill Mfg. Co., Inc., Valparaiso, Ind.
LEWIS—Wire straightening and cutting machines. The Lewis Machine Co., Cleveland, Ohio.
LIBERTY—Fibre welding helmet. Welding Engineering Corp., Milwaukee, Wis.
LIBERTY—Coil and machine chain. The Cleveland Chain & Mfg. Co., Cleveland, Ohio.
LICHTMAN—Leather for welder's clothing. J. Lichtman & Sons, Newark, N. J.
LIFELONG—Welding torch bodies and cutting assemblies. Smith Welding Equip. Corp., Minneapolis, Minn.
LIFETIME—Sheet, plate, wire, rod, bar, structural shapes, extrusions, tubing, aluminum products, etc. Reynolds Metals Co., Louisville, Ky.
LIFT-FRONT—Welder's goggles. American Industrial Safety Equipment Co., Cleveland, Ohio.
LIFT-O-KRANE—Fork lift trucks. Silent Hoist & Crane Co., Brooklyn, N. Y.
LIGHTNING LIFT—Lifting jack. Blackhawk Mfg. Co., Milwaukee, Wis.
LIGHTWELD—Welding electrode. Lincoln Electric Co., Cleveland, Ohio.
LIN-DE-SURFACER—Machines for the mechanized oxyacetylene conditioning of steel. The Linde Air Products Co., New York, N. Y.
LINCOLN—Electric arc welding equipment. The Lincoln Electric Co., Cleveland, Ohio.
LINCOLNDUCTOR—Welding cable. Lincoln Electric Co., Cleveland, Ohio.
LINCOLN ELECTRODE HOLDERS—Electrode holders. The Lincoln Electric Co., Cleveland, Ohio.
LINCOLN GROUND CLAMPS—Ground clamps. Lincoln Electric Co., Cleveland, Ohio.
LINCOLN HIGH VISIBILITY—Welding glass for electric arc welding. The Lincoln Electric Co., Cleveland, Ohio.
LINCOLN PROTECTIVE SHIELD—Leak-proof head shields. The Lincoln Electric Co., Cleveland, Ohio.
LINCOLNWELD—Submerged arc welder. Lincoln Electric Co., Cleveland, Ohio.
LINCONTROL—A foot operated welding control. Lincoln Electric Co., Cleveland, Ohio.
LINCWELDER—A.C. and D.C. form welders. The Lincoln Steel Co., Coatesville, Pa.
LINDE—Gases, sigma welding equipment, powder and flame spraying equipment, steel conditioning machines, jet-piercing, plate-edge and cold-treatment equip. The Linde Air Products Co., New York, N. Y.
LINDOX—Oxygen. Linde Air Products Co., New York, N. Y.
LINE-ARC—Resistance welder contactors. Electric Controller & Mfg. Co., Cleveland, Ohio.
LINK—Welding machines. Link Welder Corp., Detroit, Mich.
LION—American pattern files. Grobet File Co. of America, Inc., New York, N. Y.
LIQUAMETTE—Wet abrasive blasting equipment. American Wheelabrator & Equipment Corp., Mishawaka, Ind.
LIQUID HEAT—Salt bath material. E. F. Houghton & Co., Phila., Pa.
LIQUID—Acetylene, oxygen and compressed hydrogen. Liquid Carbonic Corp., Industrial Gas Div., Chicago, Ill.
LIQUIFLUX—Liquid flux for soldering and brazing. The Sight Feed Generator Co., West Alexandria, Ohio.
LIQUIFLUXER—Liquid flux dispenser. The Sight Feed Generator Co., W. Alexandria, Ohio.
LIQUI-JECTOR—Liquid removal from air and gas lines. Selas Corp. of America, Philadelphia, Pa.
LITECOTE—Mild steel electrode. Harnischfeger Corp., Milwaukee, Wis.
LITEWATE—Goggles. Sellstrom Mfg. Co., Chicago, Ill.
LITE-WEIGHT—Propane cylinders. Harrisburg Steel Corp., Harrisburg, Pa.
LITHABOND—Electrode coating materials. Foote Mineral Co., Inc., Philadelphia, Pa.
LITTLE BERTHA—Pre-Heating torch. L. B. White Co., Onalaska, Wis.
LITTLE DAVID—Arc welding electrode holder. Lacey-Webber Co., Kalamazoo, Mich.
LITTLE GEORGE—Cecil C. Peck Co., Cleveland, Ohio.
LITTLE GIANT—Pneumatic chipping hammer. The Dallett Co., Philadelphia, Pa.
LITTLE GIANT—Die stock sets. Greenfield Tap & Die Corp., Greenfield, Mass.
LITTLE GIANT—Electric arc welder. Precision Welder Mfg. Co., Chicago, Ill.
LITTLE JOE—Welder's seat and tool tray. Clinton Prod. Co., Clinton, Mich.
LITTLE PAL—Portable acetylene generator. Modern Engineering Co., Inc., St. Louis, Mo.
LITTLE WIZARD—Differential chain hoist. David Round & Son, Cleveland, Ohio.
LIVE-LINE—Ground clamps. Railway & Industrial Engineering Co., Greensburg, Pa.
LLOYD'S—Soldering fluid and flux. Johnson Mfg. Co., Mount Vernon, Iowa.
LOADING DOCK SHIELD—Dock shield. Frommelt Industries, Dubuque, Ia.
LOAD KING—Spur-geared and electric chain hoists and wire rope electric hoist. The Yale & Towne Mfg. Co., Philadelphia, Pa.
LOAD LIFTER—Electric hoists and cranes. Manning, Maxwell & Moore, Inc., Muskegon, Mich.
LOCKLITE—Welding goggles. Carter-Lockard Co., Los Angeles, Calif.
LOCK-ON—Socket to handle lock. Blackhawk Mfg. Co., Milwaukee, Wis.
LO-CRO—Electrodes for chromium steel. Crucible Steel Co. of America, New York, N. Y.
LO-FLO—Silver solders. Goldsmith Bros. Smelting and Refining Co., Chicago, Ill.
LO-MELT COPPER—Phos-copper alloy. Canadian Liquid Air Co., Ltd., Montreal, Que., Canada.
LOCKWEAVE—Coil chain. The Cleveland Chain & Mfg. Co., Cleveland, Ohio.
LOCKWELD—Welding electrodes. Larkin Lectro Products Corp., Pine Bluff, Arkansas.
LO-MAINTENANCE—Electric motors and motor control. Allis-Chalmers Mfg. Co., Milwaukee, Wis.
LONGBOY—50 ft. rule. Master Rule Mfg. Co., Middletown, N. Y.
LONG-LIFE—Laminated plates and lenses. Sellstrom Mfg. Co., Chicago, Ill.
LONG TANGENT—Pipe welding fittings. Midwest Piping & Supply Co., Inc., St. Louis, Mo.
LOOKS—Goggles. Mine Safety Appliances Co., Pittsburgh, Pa.
LORVIS—Automatic clamp wrench. Blackford Mfg. Co., Inc., Hartford City, Ind.
LOWAMP—Specially developed autectrodes. Eutectic Welding Alloys Corp., Flushing, N. Y.
LOW TEMP—Specially developed eutec rods. Eutectic Welding Alloys Corp., Flushing, N. Y.
LOW TEMPERATURE No. 1100—Silver brazing fluxes. The American Platinum Works, Newark, N. J.
LUBRO-CONTROL—Filter-lubricator-regulator. Norgren Co., C. A., Denver, Colo.
LUG-SET—Cable lug attachment equipment and cable splicers. Tweco Products Co., Wichita, Kans.
LUKENS—Clad steel. Lukens Steel Co., Coatesville, Pa.
LUKENWELD—Fabrication, jacketed steel driver rolls. Lukens Steel Co., Coatesville, Pa.
LUMINARC—Flux coated, aluminum welding electrode. Universal Welding Corp., Cleveland, Ohio.
LUXIFLUX—Nonoxidizing corrective flux. Special Chemicals Co., New York, N. Y.
LYON—Welding benches and tables. Lyon Metal Products, Inc., Aurora, Ill.
LYSTON—Soldering flux. Farraloy Co., Philadelphia, Pa.

M

M-I—Acetylene compressing units. Sight Feed Generator Co., West Alexandria, Ohio.
M-22, 26—Fire brick. Mexico Refractories Co., Mexico, Mo.
M-B—Airline filters and lubricators; air pressure regulators and portable pneumatic grinders. M-B Products, Detroit, Mich.
MF—Magnetic flux and arc welder. American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
MGC—Battery chargers generating equip., aircraft energizers, etc. Hobart Bros. Co., Troy, Ohio.
MMM—Coated abrasive, adhesives, masking tape, etc. Minnesota Mining and Mfg. Co., St. Paul, Minn.
MO-FOG—Non-fogging compound. Carhoff Co., Cleveland, Ohio.
MSA—Welding helmets, protective hats, coated covered glass, airline respirators, goggles, first aid kits, fire blankets, welders' leather clothing, welders' ear protectors, gas detectors and indicators and metal fume respirators. Mine Safety Appliances Co., Pittsburgh, Pa.
MSA-LAMB—Venturi type air-venting apparatus. Mine Safety Appliances Co., Pittsburgh, Pa.
M & T—Welding machines and welding accessories. Metal & Thermit Corp., New York, N. Y.
MTV—Adjustable gas welding tip. L. B. White Co., La Crosse, Wis.
MW—Welding rods. The Oxweld Railroad Service Co., Chicago, Ill.
M/W—Welding and cutting equipment, welding rods, electrodes, accessories and supplies. Machinery and Welder Corp., Chicago, Ill.
MW-50—Insulating Cement. The Philip Carey Mfg. Co., Lockland, Cincinnati, Ohio.
M/W ALUMINUM—Gas welding wire. Machinery & Welder Corp., Chicago, Ill.
M/W 95-5 ALUMINUM (DRAWN)—Welding rod. Machinery & Welder Corp., Chicago, Ill.
M/W CAST ALUMINUM—Alloy rod. Machinery & Welder Corp., Chicago, Ill.
M/W HARDSURF—Hard surfacing electrodes. Machinery & Welder Corp., Chicago, Ill.
M/W HEAVY-COATED ALUMINUM—Arc welding electrode. Machinery & Welder Corp., Chicago, Ill.
M/W LOW-FUMING BRONZE No. 997—Welding rod. Machinery & Welder Corp., Chicago, Ill.
M/W MANGANESE BRONZE—Alloy for welding of cast, malleable iron, steel, wrought, galvanized iron, brass, copper. Machinery & Welder Corp., Chicago, Ill.
M/W NICMAN—Bare or coated electrodes. Machinery & Welder Corp., Chicago, Ill.
M/W PHOSPHOR BRONZE—Coated electrode. Machinery & Welder Corp., Chicago, Ill.
MX—Depressed center wheels and disc. Carborundum Co., Niagara Falls, N. Y.
MACALLOY—Brazing and hard surfacing alloys and for casting repairs. McCauley Alloy Sales Co., Chicago, Ill.
MACK-FLEX—Flexible grinding wheels. Macklin Company, Jackson, Mich.
MACKLIN—Abrasive grinding wheels. Macklin Co., Jackson, Mich.
MACLEOD—Fans and burners, etc. The Macleod Co., Cincinnati, Ohio.
MACO—Abrasion and corrosion resistant alloy castings. McCauley Alloy Co., Steger, Ill.
MAGBOND—Colloidal gelatinous binder and lubricant. Foote Mineral Co., Philadelphia, Pa.
MAGIC WAND—Portable A-C arc welder. Patent Specialties, Inc., Miami, Fla.
MAG-NA FLO—Flux for gas welding of magnesium. Park Stewart, Worthington, Pa.
MAGNAFLUX—Magnetic particle inspection equipment. Magnaflux Corp., Chicago, Ill.
MAGNAGLO—Fluorescent magnetic particle inspection equipment. Magnaflux Corp., Chicago, Ill.
MAGNAGROUND—Magnetic ground clamp. Dings Magnetic Separator Co., Milwaukee, Wis.
MAGNA-LYTE—Portable welding gun. Progressive Welder Sales Co., Detroit, Mich.
MAGNAPASS—Passivator and cleaner for stainless steels. Best Effect Chemical Co., Hackensack, N J.
MAGNATATE—Rust, stain and scratch remover from stainless steels. Best Effect Chemical Co., Hackensack, N. J.
MAGNA-TONE NM—Manganese steel rebuilding alloy. Resisto-Loy Co., Grand Rapids, Mich.
MAGNA-WELD—Magnifying lens for welding helmets. Pennsylvania Optical Co., Reading, Pa.
MAGNECOTE—Hardfacing flux. Stoody Co., Whittier, Calif.
MAGNETRODE—Magnetic ground. Magnetrode Corp., Kansas City, Mo.
MAGNOLIA—Babbitt metals. Magnolia Metal Co., Elizabeth, N. J.
MAGNOLIA—Welding and cutting equipment, accessories, supplies, etc. Air Reduction Sales Co., New York, N. Y.
MAHR—Oil burning preheating torches, oil gas and electric industrial furnaces and equipment. Mahr Mfg. Co., Minneapolis, Minn.
MAINLINE—Welding electrode holder service kit. Moorewood Electric & Mfg. Co., Milwaukee, Wis.
MAJOR—Rubber covered welding cable. National Cable Corp., Milwaukee, Wis.
MAKEPEACE—Brazing alloys and rings, silver brazing fluxes and alloys. D. E. Makepeace Co., Attleboro, Mass.
MALL—Flexible shaft equipment and portable power tools. Mall Tool Co., Chicago, Ill.
MALL DRILLS—Portable electric drills. Mall Tool Co., Chicago, Ill.

MALL FLEX—Flexible shaft machine. Mall Tool Co., Chicago, Ill.
MALL POLISHER—Portable electric polishers. Mall Tool Co., Chicago, Ill.
MALLSAWS—Portable electric saws. Mall Tool Co., Chicago, Ill.
MALLORY 3, 22, 53B, 73, 100—Copper alloys used in resistance welding applications. P. R. Mallory & Co., Inc., Indianapolis, Ind.
MALLORY 100M & 100W—High conductivity refractory materials used in resistance welding. P. R. Mallory & Co., Inc., Indianapolis, Ind.
MALTESE—Welding glasses. Semon Bache & Co., New York, N. Y.
MALTESE CROSS—Hose. Hewitt-Robins, Inc., Stamford, Conn.
MANALLINCOLN WELD—Submerged arc welder. Lincoln Electric Co., Cleveland, Ohio.
MANCO—Bolt rod and wire cutters. Manco Mfg. Co., Bradley, Ill.
MANGALOY—Multi-pass hard facing rods. Industrial Overlay Metals, Inc., Eaton, Ohio.
MANGANAL—Manganese nickel steel electrodes, wedge bars, applicator bars, plates. Stulz-Sickles Co., Newark, N. J.
MANGANARC—Manganese electrodes and welding rods. Universal Welding Corp., Cleveland, Ohio.
MANGANEND—Electrodes for welding high carbon, low alloy high tensile and free machining steels. Arcos Corp., Philadelphia, Pa.
MANGANICK—Cold-drawn and heat treated electrode. Hobart Brothers Co., Troy, Ohio.
MANGANOX—Manganese combined with a nickel content and a high percentage of carbon steel rod for arc welding. Central Steel & Wire Co., Chicago, Ill.
MANGANWELD — Hardsurfacing electrodes. The Lincoln Electric Co., Cleveland, Ohio.
MANGA-TONE NM—Alloyed rod. Resisto-Loy Co., Grand Rapids, Mich.
MANGO-PLATE—Alloy steel plate for severe wear and inspect problems. Pyramid Steel Co., Cleveland, Ohio.
MANG-TRODE — Manganese-bronze electrode. Ampco Metal, Inc., Milwaukee 46, Wis.
MANHATTAN—Abrasive wheels, hose. The Manhattan Rubber Mfg. Div., Raybestos-Manhattan, Inc., Passaic, N. J.
MANHATTAN—Packing. Greene, Tweed & Co., New Wales, Pa.
MANKOTE—Flux coated high manganese rod. Central Steel & Wire Co., Chicago, Ill.
MANSIL—Non deforming oil hardening tool steel. Henry Disston & Sons, Inc., Philadelphia, Pa.
MANSON—Friction tape. The Okonite Co., Passaic, N. J.
MAN-TEN (USS)—Steel. United States Steel Subsidiaries, Pittsburgh, Pa.
MARCO—Morgan Aluminum Welding Rod Co., Cleveland, Ohio.
MARION—Panel type electrical indicating instruments. Marion Electrical Instrument Co., Manchester, N. H.
MARISON—Compressed gas cylinders. The Marison Co., South Elgin, Ill.
MARKAL PAINT STICKS—Industrial paint markers in stick form. Markal Co., Chicago, Ill.
MARQ-ROD—Powdered-iron electrode. Marquette Mfg. Co., Inc., Minneapolis, Minn.
MARQUETTE—Portable spot welders, cable connectors, ground clamps, electrodes, helmets and lenses, silver-soldering kits. Marquette Manufacturing Co., Inc., Minneapolis, Minn.
MARSH—Gauges. James P. Marsh Corp., Skokie, Ill.
MARSTWELD—Swedish Marten soft steel welding wire. Swedish Iron and Steel Corp., New York, N. Y.
MAR-TEMP—Heat treating salts and quenching oils. E. F. Houghton & Co., Philadelphia, Pa.
MARTIN—Automatic welding machines, portable gun welders, spot projection type welding machines, rocker arm welder, and presstype welders, welding transformers and welding cable. Martin Electric Co., Detroit, Mich.
MARVEL—Portable blowers, exhaust blowers, forge blowers, and ventilating fans. Electric Blower Co., Boston, Mass.
MARVEL—Brazing fluxes. Air Reduction Sales Co., New York, N. Y.
MARVEL—Cutters, bolts and rod, wire, hack saw machines, band saws, hack saws and machinist's vises. Armstrong-Blum Mfg. Co., Chicago, Ill.
MARVEL—Sanding discs. Bates Products, Inc., Chicago, Ill.
MASONEILAN—Air pressure regulators and filters. Mason-Neilan Regulator Co., Boston, Mass.
MASTAIR—Valve. Hanna Engineering Works, Chicago, Ill.
MASTER—Wire wheel brushes. The Osborn Manufacturing Co., Cleveland, Ohio.
MASTER MECHANIC KIT—Welding and cutting outfits. Burdett Oxygen Co., Cleveland, Ohio.
MASTER POWER—Portable pneumatic tools. Master Pneumatic Tool Co., Inc., Cleveland, Ohio.
MASTER WELDER—Welding gloves. Hanover Glove Co., Hanover, Pa.
MATRIX—Electrode for alloy and cast steels. Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
MAURATH — Flux-coated alloy-steel electrodes. Maurath, Inc., Cleveland, Ohio.
MAXAW—Portable electric saws. Cummins-Chicago Corp., Chicago, Ill.
MAYARI R—Low alloy high strength steel. Bethlehem Steel Co., Bethlehem, Pa.
MAYHEW—Mechanics hand tools. Mayhew Steel Products, Inc., Shelburne Falls, Mass.
MAZLO — Welding rods. American Magnesium Corp., Cleveland, Ohio.
McCABE—Pneumatic flanging machines. McCabe Mfg. Co., Lawrence, Mass.
McCANN—Stress relieving furnaces. Young Brothers Co., Cleveland, Ohio.
McCLARY—Electrode holders. McClary & Buyers Equipment Co., Oakland, Calif.
MAC DONALD—Hard surfacing electrodes. Shober Sales, Inc., Stockton, Calif.
McDONALD "BURTWELD"—Lenses. B. F. McDonald Co., Los Angeles, Calif.
McGILL—Portable Lamp Guards. McGill Mfg. Co., Inc., Valparaiso, Ind.
McHALE—Spot and seam Heliarc welding jigs. McHale Mfg. Co., Los Angeles, Calif.
McKAY—Shielded arc welding electrodes. The McKay Co., Pittsburgh, Pa.
McKAY—Valves for high pressure gas cylinders. Linde Air Products Co., New York, N. Y.
McKEE ECLIPSE—Furnaces, blast burners, tips and nozzles and igniters. Eclipse Fuel Engrg. Co., Rockford, Ill.
MEASURENCH—Torque indicating wrench. J. H. Williams & Co., Buffalo, N. Y.
MEC-CON—Welding cable connector. Tweco Products Co., Wichita, Kansas.
MECHANICAL CONNECTORS—Cable connectors. National Electric Products Co., Pittsburgh, Pa.
MECHANICS ROLLS—Aluminum oxide cloth rolls. Clover Manufacturing Co., Norwalk, Conn.
MECHANICLAMPT—Insert type tool holder. Firth Sterling Steel & Carbide Corp., Pittsburgh, Pa.
MECHANI-CUTS—Power hack saws. Peerless Machine Co., Racine, Wis.
MECHANIGRIPT—Insert type tool holder. Firth Sterling Steel & Carbide Corp., Pittsburgh, Pa.
MECO—Welding and cutting apparatus and supplies, accessories, preheating torches, acetylene generators, electric welding accessories, etc. Modern Engineering Co., St. Louis, Mo.
MECH MASTER—"C" Clamps and machine vises. Mechanics Engineering Co., Jackson, Mich.
MEEHANITE—Sorbo-pearlitic iron. Meehanite Metal Corp., New Rochelle, N. Y.
MELTOMATIC—Tinning compounds. Wayne Chemical Products Co., Detroit, Mich.
MERCURY—Twist drills. Cogsdill Twist Drill Co., Rockford, Ill.
MERCURY—Electric soldering irons. Vulcan Electric Co., Danvers, Mass.
MERIT METAL—Babbitt metal. Federated Metals Div., American Smelting & Refining Co., New York, N. Y.
MERIX ANTI-FOG—Anti-fog compounds. Merix Chemical Co., Chicago, Ill.
MERIX ANTI-STATIC 79—Polishing compound. Merix Chemical Co., Chicago, Ill.
MERIX COMPOUND "MEG"—Lens cleaner. Merix Chemical Co., Chicago, Ill.
MERIX DRY-CRISP—Rust preventative. Merix Chemical Co., Chicago, Ill.
MESTA-THOMPSON-GIBB—Flash welder. Mesta Machine Co., Pittsburgh, Pa.
MESURFLO—Flow volume control. Hays Mfg. Co., Erie, Pa.
METAL BOND—Soldering and welding fluxes, hard and aluminum solder. Metal Bond Mfg. Co., St. Louis, Mo.
METAL FILLER—For coating welds on cast iron. Hobart Bros. Co., Troy, Ohio.
METALITE—Aluminum oxide coated abrasive. Behr-Manning Corp., Troy, N. Y.
METALITE—Hard facing welding rod. Adams Alloy Co., Wakita, Okla.
METALITE PLOW POINT BAR—Hard facing alloy. Adams Alloy Co., Wakita, Okla.
METALKLAD—Arc welding lens. American Agile Corp., Cleveland, Ohio.
METALLIZER—Gun for spraying surfaces with metal. Metallizing Co. of America, Inc., Chicago, Ill.
METAL MARK—Metal marking crayons. The American Crayon Co., Sandusky, Ohio.
METAL MASTER—Welder. Clinton Machine Co., Clinton, Mich.
METAL POWDERS—Hoeganaes Sponge Iron Corp., Riverton, N. J.
METAL ZIPPER—A-C arc welder. Mid-States Equipment Corp., Chicago, Ill.
METALMASTER—Welding, cutting and metal-treating apparatus. Linde Air Products Co., New York, N. Y.
METALMASTER—Electric drills, saws and grinders. The Bradford Machine Tool Co., Cincinnati, Ohio.
METALSPRAY—Metal spraying gun, also metal spraying equipment. Metalspray Co., Inc., Los Angeles, Calif.
METCO—Metallizing guns and equipment. Metallizing Engineering Co., Long Island City, N. Y.
METEOR—Electric hoist. Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
METHASPEC — Spectacle type plastic goggle. Watchemoket Optical Co., Providence, R. I.
METRO—Welding helmets, hand shields, goggles. Metro Manufacturing Co., Long Island City, N. Y.
METRON—Spot welders. Metron Instrument Co., Denver, Colo.
METROWELD—Filter-lens for goggles, helmets and handshields. Metro Mfg. Co., Long Island City, N. Y.
METSO METAL CLEANERS — Philadelphia Quartz Co., Philadelphia, Pa.
METWELD—Welding and cutting torches, accessories, supplies, acetylene generators, and arc welders. Welding Metals Mfg. Co., E. Detroit, Mich.
MEX-R-CO LO-SET—Bonding mortar. Mexico Refractories Co., Mexico, Mo.
MEX-R-CO HY-SET—Bonding mortar. Mexico Refractories Co., Mexico, Mo.
MEZURALL—Chrome-clad tape rules. The Lufkin Rule Co., Saginaw, Mich.
MICALITE—Micalite eyeshield. Harry Buegeleisen, Inc., Brooklyn, N. Y.
MICHEL—Weld-timer. The Central Sales Corp., Chicago, Ill.
MICRO-FILM—Brazing and soldering alloys. Fusion Engineering Co., Cleveland, Ohio.
MICRO-FOG—Lubricator Norgren Co., C. A., Denver, Colo.
MICROMETRIC—Speed control valves. Hannifin Corp., Chicago, Ill.
MICROPOISE—Balancing machines. Commerce Pattern Foundry & Machinery Co., Detroit, Mich.
MICRO-SPRAY—Paint gun. Kellogg Division of American Brake Shoe Co., Rochester, N. Y.
MICROSTEEL—Mig carbon steel welding wire. Weldrod Co., Meadowbrook (Philadelphia area) Pa.
MICRO-WELD—Spot, butt and flash welders. Micro Products Co., Chicago, Ill.
MIDGET—Welding torches. Modern Engineering Co., Inc., St. Louis, Mo.
MIDGET—Spot and butt welders. Universal Welder Corp., Cleveland, Ohio.
MIDGET KING—Roller chain electric hoist. The Yale & Towne Mfg. Co., Philadelphia, Pa.
MIDGET TRIPLOC—Plugs and receptacles. Pyle-National Co., Chicago, Ill.
MID-STATES—AC arc welders, carbon arc torches and high frequency arc stabilizers. Mid-States Welder Mfg. Co., Chicago, Ill.
MID-STATES METAL ZIPPER—Arc welder. Mid-States Welder Mfg. Co., Chicago, Ill.
MIDWEST—Fabricated piping, and pipe welding fittings. Midwest Piping and Supply Co., St. Louis, Mo.
MIGHTY MIDGET PULLER—Ratchet lever puller. Coffing Hoist Co., Danville, Ill.
MIGHTY-MIDGET—Portable acetylene generators. John R. R. Miles, Inc., Minneapolis, Minn.
MIKALOID—Plastic goggles. Burdett Oxygen Co., Cleveland, Ohio.
MILBURN—Oxy-acetylene welding and cutting equipment and accessories. Milburn, Alex., Inc., Baltimore, Md.
MILES—Portable welding and cutting torches, regulators, acetylene generators. John R. R. Miles, Inc., Minneapolis, Minn.
MILFORD—Hack saw blades, metal cutting band saw blades. Henry G. Thompson & Co., New Haven, Conn.
MILLER—A. C. and "HELIARC" A.C. transformer welders, SR selenium rectifier type D.C. welders, A.C. combination welding and gasoline driven generators, portable spot welders and submerged arc A. C. transformer welders. Miller Electric Mfg. Co., Appleton, Wis.
MILLER—Air and hydraulic cylinders, accumulators and boosters. Miller Motor Co., Melrose Park, Ill.
MILLER-PEERLESS—Fire extinguishers. Miller-Peerless Mfg. Co., Chicago, Ill.
MILLER REACTANCE ARC—A-C electric arc welders. Miller Electric Mfg. Co., Inc., Appleton, Wis.
MILLERS FALLS—Hand tools and portable electric tools. Millers Falls Co., Greenfield, Mass.
MILWAUKEE—Portable electric drills; sanders, grinders and hammers. Milwaukee Electric Tool Corp., Milwaukee, Wis.
MINERALIGHT—Black light unit for inspection of flaws, etc. Ultra-Violet Products, Inc., South Pasadena, Calif.
MINIT KOTE—Phosphating cleaner. Klem Chemicals, Inc., Dearborn, Mich.
MINUTE MAN—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
MINUTE MAN— Welding positioner. The du Mont Corp., Greenfield, Mass.
MIRACLE PASTE—Hardfacing paste. Mir-O-Col Alloy Co., Los Angeles, Calif.
MIR-O-COL—Hard-facing welding rods and electrodes and automatic hardfacing wire. Mir-O-Col Alloy Co., Los Angeles, Calif.
MISCO—Oxygen, acetylene and generators. Mitchell Supply Co., Minneapolis, Minn.
MISCO HELPER—AC electric welders. Mitchell Supply Co., Minneapolis, Minn.
MISCO METAL—Sheets, plates, bars, welding rod, castings. Michigan Steel Casting Co., Detroit, Mich.
MISENER—Hole saws. Misener Manufacturing Co., Inc., Syracuse, N. Y.
MISSING LINK—High frequency arc stabilizer. Mid-States Equipment Co., Chicago, Ill.
MIXEND—Electrodes for welding cast iron. Arcos Corp., Philadelphia, Pa.
MODEL—Hose. Mulconroy Co., Philadelphia, Pa.
MODEL G—Pneumatic scaling hammers. Borm Manufacturing Co., Elgin, Ill.
MODEL K—Portable motor driven cutting machine. Harris Calorific Co., Cleveland, Ohio.
MODEL T-II—Twin carbon torch. Twentieth Century Manufacturing Co., Minneapolis, Minn.
MODEL W-I—Electric brazing torch. Borm Manufacturing Co., Elgin, Ill.
MODIC L—Cable connectors. Wagner Manufacturing Co., Inc., Jackson, Mo.

MODU WAVE—Welder. Sciaky Bros., Inc., Chicago, Ill.
MOGUL—High speed steel. Jessop Steel Co., Washington, Pa.
MOGUL—Metal spraying equipment and metallizing wire. Metallizing Co. of America, Inc., Chicago, Ill.
MOLD-EASE PCR—Die lubricant. Meriz Chemical Co., Chicago, Ill.
MOLEX—Coated arc welding electrode. Metal & Thermit Corp., New York N. Y.
MOLY-C-ALLOY—Alloy steel electrode. Anthony Carlin Co., Cleveland, Ohio.
MOLY-IRON—Iron-molybdenum alloy. Weatherly Foundry and Manufacturing Company, Weatherly, Pa.
MOLYMANG—Manganese steel welding electrodes. Westinghouse Electric Corp., Pittsburgh, Pa.
MOLY-MANG—Hardfacing electrode. Mir-O-Col Alloy Co., Inc., Los Angeles, Calif.
MOLY-NICKEL CAST IRON—Cast iron rod. Steel Sales Corp., Chicago, Ill.
MOLY-RODS—MOLY H—Alloy cast iron rods and for hard surfacing rods. Chicago Hardware Foundry Co., No. Chicago, Ill.
MO-MANG—Welding rods and electrodes. American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
MONARCH—Chains. Bridgeport Chain & Mfg. Co., The, Bridgeport, Conn.
MONARCH—Hose. Hewitt-Robins, Inc., Stamford, Conn.
MONARCH—Helmets and face shields, helmet and coverglass & lens. Fibre-Metal Products Co., Chester, Pa.
MONARCH—Welding lens. Welding Engineering Corp., Milwaukee, Wis.
MONARCH—Cutting torch. Harris Calorific Co., Cleveland, Ohio.
MONARCH 72-B—Band saw machines. De Walt, Inc., Lancaster, Pa.
MONEL—Nickel copper corrosion resisting alloy. The International Nickel Co., Inc., New York, N. Y.
MONEL-CLAD STEEL—Bi-metal plate composed of a layer of solid Monel bonded to a heavier backing plate of steel. Lukens Steel Co., Coatesville, Pa.
MONELITE—Goggles. Dockson Corp., Detroit, Mich.
MONEND 806—Welding electrode, electrodes for welding Monel. Arcos Corp., Philadelphia, Pa.
MONEY-MAKER—Welding and cutting equipment. Modern Engineering Co., Inc., St. Louis, Mo.
MONITOR—Portable oxy-acetylene cutting machine. The Linde Air-Products Co., New York, N. Y.
MONITOR—Wire wheel brushes. The Osborn Mfg. Co., Cleveland, Ohio.
MONITOR—Steel tape rule. Master Rule Mfg. Co., Middletown, N. Y.
MONO FIBRIK—Fire brick. Mexico Refractories Co., Mexico, Mo.
MONO-BILT—Rotary wire wheel brush. The Milwaukee Brush Mfg. Co., Milwaukee, Wis.
MONOFRAX—Refractories. The Carborundum Co., Niagara Falls, N. Y.
MONO GOGGLE—Goggle. Willson Products, Inc., Reading, Pa.
MONOGRAPH—Oxy-acetylene shape cutting machine. Air Reduction Sales Co., Div., of Air Reduction Co., Inc., New York, N. Y.
MONOLINE—Fire brick plastic. Quigley Co., Inc., New York, N. Y.
MONOWELD NO. 1—Low-nitrogen steel electrode All-State Welding Alloys Co., White Plains, N. Y.
MOORE—Trolleys. Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
MO-REX—Fire brick. Mexico Refractories Co., Mexico, Mo.
MORAN'S—Belt couplings. Greene, Tweed & Co., New Wales, Pa.
MOREY—Fluxes, welding rods and electrodes. Morey Flux & Chemical Co., Wilmington, Del.
MORSE—Small cutting tools. Morse Twist Drill & Machine Co., New Bedford, Mass.
MOR-WELD—Welding rods, electrodes, welding accessories, etc. Morris Wheeler & Co., Inc., Philadelphia, Pa.
MOSLO—Equipment used in the manufacture of arc welding electrodes. Moslo Machinery Co., Cleveland Ohio.
MOTO SAW—Portable electric jig saw. Dremel Manufacturing Co., Racine, Wis.
MOTO TOOL—Portable electric hand tool. Dremel Manufacturing Co., Racine, Wis.
MOTT—Weld-on plow points. Mott Products Co., Jackson, Mich.
MOULDOUGH—Backing up material. Metal Bond Mfg. Co., St. Louis, Mo.
MUEHLMATT—Drilling machines. The Hamilton Tool Co., Hamilton, Ohio.
MULLFRAX—Refractories. The Carborundum Co., Niagara Falls, N. Y.
MULSINE—Metals and parts cleaner. Turco Products, Inc., Los Angeles, Calif.
MULSIREX—Metals and parts cleaner. Turco Products, Inc., Los Angeles, Calif.
MULTI-FLAME—Torch head. The Linde Air Products Co., New York, N. Y.
MULTI-FLEX—Carbon motor and generator brushes. Speer Carbon Co., St. Marys, Pa.
MULTI-HYDROMATIC—Spot; projection; butt; flash; gun; seam; multiple spot welders; jigs and fixtures. Multi-Hydromatic Welding & Manufacturing Co., East Detroit, Mich.
MULTIMATIC — Submerged-arc welding fixture. Automatic Welding Co., Elm Grove, Wis.
MULTI-MAX—Punch and shear combined. Parker Mfg. Co., Santa Monica, Calif.
MULTI-PIC—Weld cleaning hammer and brushes. Bernard Welding Equipment Co., Chicago, Ill.
MULTI-MET—Cast or wrought heat-resistant alloy. Haynes Stellite Co., New York, N. Y.
"MULTI-SPEED"—Multiple resistance welder. The Taylor-Winfield Corp., Warren, Ohio.
MULTI-STAGE—Gas pressure regulators. The Harris Calorific Co., Cleveland, Ohio.
MULTI-WELD—Circuit control panels. Westinghouse Electric Corp., Pittsburgh, Pa.
MULTIPLE UNIT—Furnaces and transformers. Hevi-Duty Electric Co., Milwaukee, Wis.
MUREX—Arc welding electrodes. Metal and Thermit Corp., New York, N. Y.
MURINE—Eye drops. The Murine Co., Inc., Chicago, Ill.

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N-A-X—High tensile, low alloy steel. Great Lakes Steel Corp. Div., National Steel Corp., Detroit, Mich.
N.B.O.—Steam and sand blast hose. The Home Rubber Co., Trenton, N. J.
NCG—Welding and cutting equipment and compressed gas. National Cylinder Gas Co., Chicago, Ill.
NFA—Goggles. American Optical Co., Southbridge, Mass.
NMS—Tip cleaners. New Mexico Steel Co., Albuquerque, N. M.
N BOROLON—Grinding wheels. Simonds Abrasive Co., Philadelphia, Pa.
NALCO—Aluminum flux and soldering flux. National Lead Co., New York, N. Y.
NAGELDINGER—Regulators, valves, torches. John Nageldinger & Sons, Inc., Bronx, N. Y.
NAPOLITAN—Flux for welding sheet aluminum. Air Reduction Sales Co., New York, N. Y.
NARCO—Fire brick and refractory cement. North American Refractories Co., Cleveland, Ohio.
NASO—Goggles. American Optical Co., Southbridge, Mass.
NATIONAL—Cutting, soldering & welding tips. National Torch Tip Co., Pittsburgh, Pa.
NATIONAL—Electronic tubes. National Electronics, Inc., Geneva, Ill.
NATIONAL—Electric spot, seam, flash, butt and projection welding machines. National Electric Welding Machines Co., Bay City, Mich.
NATIONAL—Motor generator brushes, carbon blocks and paste, carbon electrodes and refractories. National Carbon Div., Union Carbide and Carbon Corp., New York, N. Y.
NATIONAL—Calcium carbide and lights and lanterns. National Carbide Company, Div. of Air Reduction Co., Inc., New York, N. Y.
NATIONAL—Weld timer. National Time & Signal Corp., Detroit, Mich.
NATIONAL—Cylinders and steel pipe. National Tube Co., Div. of U. S. Steel Corp., Pittsburgh, Pa.
NATIONAL—Gas welding and flame cutting torches, regulators including medical, fittings, adapters, and accessories. National Welding Equipment Co., San Francisco, Calif.
NATIONAL CARBIDE—Calcium carbide. National Carbide Company, a division of Air Reduction Co. Inc., New York 17, N. Y.
NATIONAL-TIMER—Welding timer. National Time & Signal Corp., Detroit, Mich.
NAVY—Screw gear hoist. David Round & Son, Cleveland, Ohio.
NAWSUCO—Leather weldor's clothing. National Welders Supply Co., Charlotte, N. C.
NEAT-N-NIFTY—Self soldering tape. W. B. Franklin Co., San Francisco, Calif.
NEECO-2-TWENTY—Double-disc grinder. New Era Engineering Co.,
NELSON—Arc stud welder. Nelson Stud Welding Div., Morton Gregory Corp., Lorain, Ohio.
NELWELD—Stud welding equipment and flux-filled studs. Nelson Stud Welding Div., Morton Gregory Corp., Lorain, Ohio.
NELWELDER—Stud welding gun and power and battery units. Nelson Stud Welding Div., Morton Gregory Corp., Lorain, Ohio.
NEMCO—Weld filler, plastic iron, cast iron weld and brazing flux and aluminum flux. Northeast Metals Co., Philadelphia, Pa.
NEOPHAN—Welding lens. Fish-Schurman Corp., New York, N. Y.
NEOTROL—Electric controls, weld-timers. Electric Controller and Mfg. Co., Cleveland, Ohio.
NEOTROL-COMPENSATING—Weld timer. The Electric Controller & Manufacturing Co., Cleveland, Ohio.
NEW DEAL—Arc welding hand shield. Welding Engineering Co., Milwaukee, Wis.
NEW EASY—Cable and chain cutters. H. K. Porter, Inc., Somerville, Mass.
NEW ENGLAND—Acetylene, argon, hydrogen, oxygen, adapters, manifolds and flame hardening equipment. New England Gas Products, Inc., Boston, Mass.
NEW KATHODE—Mild steel, general purpose electrode. Lincoln Electric Co., Cleveland, Ohio.
NEW PROCESS—Hose. Mulconroy Co., Philadelphia, Pa.
NEWTON—Wooden mallets. Cortland Sales & Products, Inc., Cortland, Ohio.
NI-AN-CO—Welding flux. Sierra Welding Flux Co., Temple City, Calif.
NIBCO—Welding fittings. Northern Indiana Brass Co., Elkhart, Ind.
NI-CASTWELD—Nickel, cast iron, welding rod. Steel Sales Corp., Chicago, Ill.
NIAGARA—Automatic electronic welding machines. Niagara Machine & Tool Works, Buffalo, N. Y.
NIBBLER—Metal cutting tool. Fenway Machine Co., Philadelphia 3, Pa.
NICASTOX—Nickel cast iron welding rod. Central Steel and Wire Co., Chicago, Ill.
NICHOLSON—Files. Nicholson File Co., Providence, R. I.
NICHOLSON SUPERIOR—Files. Nicholson File Co., Providence, R. I.
NICHROME—Nickel-chromium alloy welding rod. Driver-Harris Co., Harrison, N. J.
NICKALLOY—Nickel electrode for welding cast iron. McKay Co., Pittsburgh, Pa.
NICKEL—Nickel forms such as sheet, plate, strip, tubing, rod or wire. The International Nickel Co., New York, N. Y.
NICKEL—Alloy steel. The Babcock & Wilcox Tube Co., Beaver Falls, Pa.
NICKEL-ARC—Electrodes, cast iron welding. Alloy Rods Co., York, Pa.
NICKEL-CLAD—Bi-metal plate composed of a layer of solid nickel bonded to a heavier backing plate of steel. Lukens Steel Co., Coatesville, Pa.
NICKELCAST—For welding cast iron, machinable, approx. 100 nickel. DC or AC. Hobart Bros. Co., Troy, Ohio.
NICKELCHROMEWELD—Shielded arc electrode. The Lincoln Electric Co., Cleveland, Ohio.
NICKELEND—Electrodes for welding nickel. Arcos Corp., Philadelphia, Pa.
NICKELMANG—Welding electrode for welding manganese steels. Westinghouse Electric Corp., E. Pittsburgh, Pa.
NICKELOID METALS—Nickel plated steel. American Nickeloid Co., Peru, Ill.
NICKEL STEEL—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
NICKEND—Electrodes for welding high carbon, low alloy high tensile and free machining steel. Arcos Corp., Philadelphia, Pa.
NICKOX—Nickel steel rod. Central Steel & Wire Co., Chicago, Ill.
NICLOY—Tubing steels. The Babcock & Wilcox Tube Co., Beaver Falls, Pa.
NICO—Electrode for machine weld on cast iron. American Arc Welders, Inc., Roseau, Minn.
NICROBRAZ—Stainless steel high temperature brazing alloy. Wall Colmonoy Co., Detroit, Mich.
NICROMA—Oil hardening tool steel. Henry Disston & Sons, Inc., Philadelphia, Pa.
NICUEND—Electrodes for welding cupro-nickel. Arcos Corp., Philadelphia, Pa.
NIKROMOX—Stainless steel flux. Canadian Liquid Air Co., Ltd., Montreal, Canada.
NILES 1—Fire clay brick. The Niles Fire Brick Co., Niles, Ohio.
NILES UTILITY—Silica cement. The Niles Fire Brick Co., Niles, Ohio.
[illegible]—Carbon arc torch. Mid-States Equipment Co., Chicago, Ill.
98M2—Cutting tools. Haynes Stellite Co., New York, N. Y.
NI-RESIST—Cast iron welding rod. Chicago Hardware Foundry Co., North Chicago Ill.
NI-ROD—Electrode for cast iron welding. International Nickel Co., Inc., New York, N. Y.
NIROSTA—Chrome-nickel stainless steels. Firth-Sterling Steel Co., McKeesport, Pa.
NITECTIC—Nickel electrode. Eutectic Welding Alloys Corp., Flushing, N. Y.
NIWELD—Cast iron welding rod. Crucible Steel Co. of America, New York, N. Y.
NO DUST—Pedestal grinder with dust collector. Hammond Machinery Builders, Inc., Kalamazoo, Mich.
NO-BLOW—Blast tips. Eclipse Fuel Engineering Co., Rockford, Ill.
NO-FOG—Liquid to prevent fogging, steaming and frosting of goggles and other glass surfaces. Also lens cleaning stations. Carhoff Co., Cleveland, Ohio.
NOGAS—Metal pickling agent. E. I. duPont de Nemours & Co., Inc., Wilmington, Del.
NO-SPAT—Spatter preventatives. Midland Paint and Varnish Co., Cleveland, Ohio.
NON-FLASH—Welding and cutting torches. Torchweld Equipment Division, National Cylinder Gas Co., Chicago, Ill.
NON-KINK—Welding hose. Boston Woven Hose & Rubber Co., Cambridge, Mass.
NON-PIT—Plastic coated glass lenses for helmets, shields and goggles. Eastern Equipment Co., Willow Grove, Pa.
NONOX SWEDOX—Low carbon welding rods. Central Steel and Wire Co., Chicago, Ill.
NOPAK—Cylinders and valves. Galland-Henning Mfg. Co., Milwaukee, Wis.
NONPARELL—Non-performed wire rope. Hazard Wire Rope Div. of American Chain and Cable Co., Inc., Wilkes-Barre, Pa.
NORAMPRESS—Catalogs. The North American Press, Milwaukee, Wis.
NORBIDE—Abrasive and sand blast nozzles. Norton Co., Worcester, Mass.
NORDSTROM—Plug valves. Merco Nordstrom Valve Co., Pittsburgh, Pa.
NORELCO—Contact welding electrode. North American Philips Co., Inc., Lewiston, Maine.

NORGREN—Hose coupling and fittings, hose, unions, tubing. J. N. Feuver Co., Inc., Detroit, Mich.
NORGREN—Regulating and reducing valves, relief valves, needle valves and cocks, hose couplings and fittings and other pneumatic products. C. A. Norgren Co., Denver, Colo.
NORTON—Abrasives used in grinding wheels for grinding and finishing welds, etc. Norton Co., Worcester, Mass.
NORTON—Jacks. Duff Norton Mfg. Co., Pittsburgh, Pa.
NORWELD—Copper coated wire or welding rod. Steel Sales Corp., Chicago, Ill.
NORWELD SPECIAL—Copper coated wire. Steel Sales Corp., Chicago, Ill.
NOT-A-SEAM—Welding gloves. Hanover Gloves Co. Hanover, Pa.
NO-TANGLE NOTCH COILS—Brazing rings. Lucas-Milhaupt Eng. Co., Cudahy, Wis.
NOVIWELD—Filter glass plates and lenses. American Optical Co., Southbridge, Mass.
NOVIWELD DIDYMIUM—Filter glass plates and lenses. American Optical Co., Southbridge, Mass.
NOX-RUST—Rust preventive wrapping for metals and metal products. Nox-Rust Chemical Corp., Chicago, Ill.
NO. 6—Stainless steel flux. Farraloy Co., Philadelphia, Pa.
NO. 15 CHROME NICKEL—Stainless steel electrode. Metal & Thermit Corp., New York, N. Y.
NO. 16 GH—Stainless steel welding flux. Victor Equipment Co., San Francisco, Calif.
NO. 22—Cast iron electrodes. Chicago Hardware Foundry Co., North Chicago, Ill.
NO. 42—Solvent cleaner. Metal cleaners. Wayne Chemical Products Co., Detroit, Mich.
NO. 302—Aluminum solder flux. Flux-All Chemical Prod., New York, N. Y.
NO. 459—Martensinc hard facing rod. American Manganese Steel Div., American Brake Shoe Co. Chicago Heights, Ill.
NO. 907—Soldering flux and paste, tinning compounds. Flux-All Chemical Products, New York, N. Y.
NO. 1027—Soldering fluid. Flux-All Chemical Products, New York, N. Y.
NU-ARC—A. C. Welding equipment. Electric Arc Inc., Newark, N. J.
NUBON—Grinding and buffing wheels, shaping stones and mounted wheels and points. Universal Wheel & Abrasive Corp., Chicago, Ill.
NUCUT—American and Swiss pattern files, hand and machine. Heller Brothers Co., Newark, N. J.
NUGGET—7/16" Drive socket wrench. Blackhawk Mfg. Co., Milwaukee, Wis.
NUGGIES—1/4" Drive socket wrench. Blackhawk Mfg. Co., Milwaukee Wis.
NUMBERED STOODITES—Cast hard-facing rods. Stoody Co., Whittier, Calif.
NU-MOL—Power hack blades. E. C. Atkins & Co., Indianapolis, Ind.
NUSTEEL—For removal of heat tints in welding. NuSteel Co., Chicago, Ill.
NU-TIP—Reconditioned resistance welding electrode P. R. Mallory & Co., Inc. Indianapolis, Ind.
NU-TWIST—Die adaptor for resistance welder. P. R. Mallory & Co., Inc., Indianapolis, Ind.
NU-WRINKLE—Cap type resistance welding electrode. P. R. Mallory & Co., Inc., Indianapolis, Ind.
NYDRA-CUT—Power hack saws. Peerless Machine Co., Racine, Wis.
NYROGEN—Powder cutting gas. National Cylinder Gas Co., Chicago, Ill.
NYE-UNIVERSAL—Pipe cutters, wheels, etc. Collmer Bros., South Bend, Ind.
NYWSCO—Welding and cutting equipment and supplies. New York Welding Supply Co., New York, N. Y.

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O-B—Rail bonds, electric arc welding machines, electrodes, electrode holders, helmets, face shields and accessories. Ohio Brass Co., Mansfield, Ohio.
O-B DUOWELD—Rail bonds. Ohio Brass Co., Mansfield, Ohio.
O-B DURON—Bare copper alloy electrode. Ohio Brass Co., Mansfield, Ohio.
O-B GAS WELDING ROD—Bare copper alloy filling rod. Ohio Brass Co., Mansfield, Ohio.
O-B TITON—Rail bonds. Ohio Brass Co., Mansfield, Ohio.
OK—Wire, bolt, rod, chain and cable cutters. H. K. Porter, Inc., Somerville, Mass.
O.M.W.—Shape cutting machine. Ohmstede Machine Works, Beaumont, Texas.
OTC—Tools. Owatonna Tool Co., Owatonna, Minn.
OXCO—Oxygen and acetylene gases compressed in cylinders. Oklahoma Oxygen Co., Oklahoma City, Okla.
O-Z—Solderless lugs and connectors, heavy duty power connectors, corrosion resistant bolts, grounding fittings and welding terminal panels. O-Z Electrical Mfg. Co., Brooklyn, N. Y.
OAKITE COMPOSITIONS—Spatter preventatives. Oakite Products, Inc., New York, N. Y.
OAKITE COMPOUNDS—Rust removers. Oakite Products, Inc., New York, N. Y.
OAKITE SPECIAL PROTECTIVE OIL—Rust preventive. Oakite Products Co., Inc., New York, N. Y.
OBALLOY—Signal bonds. Ohio Brass Co., Mansfield, Ohio.
OBERG—American pattern hand and machine files and milled and curved tooth. Sandvik Saw & Tool Corp., New York, N. Y.
OCCO—Soldering flux. Ohio Carbon Co., Cleveland, Ohio.
OCTOPUS—Welding fume exhauster. Chelsea Fan & Blower Co., Inc., Irvington, N. J.
OCTOPUS JR.—Portable exhauster and blower. Chelsea Fan and Blower Co., Inc., Irvington, N. J.
OHIO—Bolts, nuts, brackets and kindred fastening devices. The Ohio Nut & Bolt Co., Berea, Ohio.
OHIO—Motor and generator brushes. Ohio Carbon Co., Cleveland, Ohio.
OHIO M—Composition and wire wound resistors. Ohio Carbon Co., Cleveland, Ohio.
OHIO QUALITY—Seamless and electric welded steel tubing. The Ohio Seamless Tube Co., Shelby, Ohio.
OHMITE—Resistance coils, rheostats, switches and similar equipment. Ohmite Mfg. Co., Chicago, Ill.
OIC—Valves. The Ohio Injector Co., Wadsworth, Ohio.
OKOCORD—Rubber-sheathed portable cable for electrical welding equipment. The Okonite Co., Passaic, N. J.
OKONITE—Rubber splicing tape. The Okonite Co., Passaic, N. J.
OLD FORGE—Chisels, pneumatic and hand; punches; hand tools and tool handles. Quality Tools Y Corp., New Wilmington, Pa.
OLD HICKORY—Welder's protective clothing. Industrial Gloves Co., Danville, Ill.
OLYMPIC BRONZE—Silicon bronze. Chase Brass & Copper Co., Waterbury, Conn.
OMICRON—Steel tape beam compasses for layout work. The Omicron Co., Glendale, Calif.
I-4-U—Salt tablet dispenser. Mine Safety Appliances Co., Pittsburgh, Pa.
ONE LINE—Welding hose. Eastern Equipment Co., Willow Grove, Pa.
"130-X" MONEL—Electrode for welding monel. International Nickel Co., Inc., New York, N. Y.
"131" NICKEL ELECTRODE—General purpose electrode for metal arc welding of nickel and low carbon nickel. International Nickel Co., Inc., N. Y., N. Y.
"132" INCONEL ELECTRODE—A general purpose electrode for metal arc welding of inconel (nickel-chromium alloy), joining inconel to steel or stainless steel. International Nickel Co., Inc., N. Y. N. Y.
"134" K MONEL—Electrode for welding "K" monel. International Nickel Co., Inc., New York, N. Y.
"140" MONEL—Electrode for welding monel to steel. International Nickel Co., Inc., New York, N. Y.
OPTIMUS—Pre-cleaner and deoxidizer. Optimus Detergents Co., Matawan, N. J.
ORANGE-STRIPE—Garnet papers and cloths. Clover Manufacturing Co., Norwalk, Conn.
OREGON—Fire hose. The Home Rubber Co., Trenton, N. J.
ORTHO-WELD—Bausch & Lomb Optical Co., Rochester, N. Y.
OSAGE—Hard-facing rods. Osage Metal Co., Oklahoma City, Okla.
OSBORN—Industrial brushes suitable for weld cleaning operations. Osborn Mfg. Co., Cleveland, Ohio.
OSTUCO—Seamless and electric welded steel tube. The Ohio Seamless Tube Co., Shelby, Ohio.
OVAL CAP—Torch lighter and flints. Flint Products Co., Brooklyn, N. Y.
OVERLY—Pneumatic tools for grinding, brushing, sanding, buffing, etc. Charles F. Overly Co., Cleveland, Ohio.
OVERSPEC—Safety and welding goggles. Harry Buegeleisen, Inc., Brooklyn, N. Y.
OVER TANG—Surfacing file holder. Remont Mfg. Co., Lombard, Ill.
OWEN—Induction type arc welder. Owen Electric Co., Fayetteville, N. C.
OXALUMA—Grinding wheels and abrasive products. Cortland Grinding Wheels Corp., Chester, Mass.
OXO—Oxygen acetylene, propane and other gas regulators, protective lens and welding goggles. Oxo Welding Equipment Co., Chicago, Ill.
OXWELD—Welding, cutting and metal-treating apparatus, welding rods and supplies. The Linde Air Products Company, New York, N. Y.
OXYARC—Holder for arc oxygen cutting rod. Arcos Corp. Philadelphia, Pa.
OXYCUTTEND—Arc-oxygen cutting electrodes. Arcos Corp., Philadelphia, Pa.
OXYGRAPH—Oxy-acetylene cutting machine. The Air Reduction Sales Co., New York, N. Y.
OXYSTAIN—Welding flux. Sierra Welding Flux Co., Temple City, Calif.
OXWELD MP-11—Acetylene generator. Linde Air Products Co., New York, N. Y.

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PBEX—High strength electrode. Perma-Latem Welding Alloys Inc., Red Bank, N. J.
PF—Mild steel A-C, D-C electrode. Harnischfeger Corp., Milwaukee, Wis.
PF—Center finder. Interstate Sales Co., New York, N. Y.
P&H—Welders, electrodes, welding positioners and hoists, etc. Harnischfeger Corp., Milwaukee, Wis.
P-H—Welding cables. Progressive Welder Company, Detroit, Mich.
PQ SILICATE OF SODA—Silicate of soda. Philadelphia Quartz Co., Philadelphia, Pa.
PUM UNITS—Motorized hydraulic pumping units. Studebaker Machine Co., Maywood, Ill.
PWC—Arc welding, resistance welding and power cables. The Plastic Wire & Cable Corp., Jewitt City, Conn.
PAASCHE—Air-painting equipment. Paasche Airbrush Co., Chicago, Ill.
PACKLESS—Air control valves. Hannifin Corp., Chicago, Ill.
PACIFIC—Welding electrodes. Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
PACIFIC—Calcium carbide. Pacific Carbide & Alloys Co., Portland, Ore.
PACIFIC—Smith Bros. & Hughes, San Diego, Cal.
PACO—Oxygen and acetylene. Pacific Acetylene Co., San Francisco, Calif.
PADDLE HOLDER—Resistance welding electrode holder. P. R. Mallory & Co., Inc., Indianapolis, Ind.
PAGE—Gas welding wire and rods and bare and flux coated electrodes. Page Steel and Wire Div., American Chain and Cable Co., Inc., Monessen, Pa.
PAGE-ARMCO—Welding electrodes and gas welding wires. Page Steel and Wire Division, American Chain and Cable Co., Inc., Monessen, Pa.
PAINTMARX—Metal marking crayons. The American Crayon Co., Sandusky, Ohio.
PAK-KUT—Oxy-acetylene emergency portable cutting outfit. National Welding Equipment Co., San Francisco, Calif.
PAL-WELD—Tinning and soldering fluxes and compounds, solders, soldering equipment, etc. Pal-Weld Mfg. Co., Seattle, Wash.
PALCO—Mechanical packing. Greene, Tweed & Co., New Wales, Pa.
PALMGREN—Rapid cable connectors, underwater cutting torches and electrode holders, weld gauges, drill press machinist and hand vises and hose clamps and tools. Chicago Tool and Engineering Co., Chicago, Ill.
PALMER-SHILE—Cylinder truck. Palmer-Shile Co., Detroit, Mich.
PALMETTO—Mechanical packing. Greene, Tweed & Co., North Wales, Pa.
PALMETTO PYRAMID—Molded packing. Greene Tweed & Co., North Wales, Pa.
PANAMA—Fire hose. The Home Rubber Co., Trenton, N. J.
PANORAM—All-plastic chippers goggle. American Optical Co., Southbridge, Mass.
PARKER-KALON—Drive screw, also welding studs. Parker-Kalon Corp., New York, N. Y.
PARMELEE—Pipe wrench. Walworth Co., New York, N. Y.
PATROL—Air and gas filters. The Patrol Valve Co., Cleveland, Ohio.
PEARLITE—Carburizer. E. F. Houghton & Co., Philadelphia, Pa.
PEARLITIC—Iron welding rods. Morey Flux & Chemical Co., Wilmington, Del.
PECK—Cecil C. Peck Co., Cleveland, Ohio.
PEER—Projection and seam spot welders. Peer, Inc., Benton Harbor, Mich.
PEERLESS—Safety cans. Miller-Peerless Mfg. Co., Chicago, Ill.
PEERLESS—Hoists. The Herrington Co., Philadelphia, Pa.
PELOX—Metal cleaners, polishers, rust preventatives and removers, cylinder trucks. Pacific Hardware & Steel Co., Inc., San Jose, Calif.
PELRO—Mechanical packing. Greene, Tweed & Co., North Wales, Pa.
PENN—Bronze welding rods. Titen Metal Mfg. Co., Bellefonte, Pa.
PENN BRONZE—Deoxidized bronze welding rods. Titen Metal Mfg. Co., Bellefonte, Pa.
PENN-WELD—Welding filter plates. Pennsylvania Optical Co., Reading, Pa.
PENNSALT—Metal cleaners. Pennsylvania Salt Mfg. Co., Philadelphia, Pa.
PENNYPINCHER—Bench vises. Columbian Vise & Mfg. Co., Cleveland, Ohio.
PENOPTIC—Head and eye protective equipment. Pennsylvania Optical Co., Reading, Pa.
PENSY UNITEX—Firebrick. Quigley Co., Inc., New York, N. Y.
PEP-UP—Salt tablets. United States Safety Service Co., Kansas City, Mo.
PERFECT BALANCE—Wire wheels. Pittsburgh Plate Glass Co. Baltimore, Md.
PERFECT WELDER—Leather welding gloves. E. J. Streichert, Chicago, Ill.
PERFECTION—Welding ground clamp. Tweco Products Co., Wichita, Kan.
PERFECTION—Bar clamp. Cincinnati Tool Co., Norwood, Cincinnati, Ohio.
PERLITON—Liquid carburizer. E. F. Houghton & Co., Philadelphia, Pa.
PERMACLAD—Stainless clad sheet steel. Jessop Steel Co., Washington, Pa.
PERMA CLEAR—Cover lenses. Chicago Eye Shield Co., Chicago, Ill.
PERMA-FLUX—Fluxes. Permalatem Welding Alloys, Inc., Red Bank, N. J.
PERMA-LIN—Waterless hand cleanser. Permalatem Welding Alloys, Inc., Red Bank, N. J.
PERMALATEM—Gas and arc welding rods and fluxes. Permalatem Welding Alloys Co., Red Bank, N. J.
PERMALOY—Gas welding rods. Permalatem Welding Alloys Co., Red Bank, N. J.
PESCO—Copper welding rods and fluxes. Perry Equipment Corp., Philadelphia, Pa.
PERSORB—Sweat band. Mine Safety Appliances Co., Pittsburgh, Pa.

PETERSON—Preheating torches, surface grinders and welding fluxes. Peterson Welding Laboratories, Kansas City, Mo.
PHIL-KON B—Heat treated copper base alloys. Philadelphia Bronze & Brass Corp., Philadelphia, Pa.
PHILGAS—Liquefied petroleum gas. Phillips Petroleum Co., Detroit, Mich.
PHILLSOLV—Vapor degreasing solvent. Phillips Manufacturing Co., Chicago, Ill.
PHOMAIRE FOAM MAKER—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PHOMAIRE FOAM PROPORTIONING TANK—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PHOMENE—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PHOMENE FOAM RECHARGE—Fire extinguisher recharges. Pyrene Manufacturing Co., Newark, N. J.
PHOMIDE FOAM FORMING SOLUTION—Fire extinguisher recharges. Pyrene Manufacturing Co., Newark, N. J.
PHOMAIRE PLAYPIPE—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PHOS-BRONZE — All-position electrode. Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
PHOS-COPPER—Copper alloy. Westinghouse Electris Corp., East Pittsburgh, Pa.
PHOSCO—Low temperature brazing alloy. United Wire & Supply Corp., Providence, R. I.
PHOSPHORUS BRONZE 310 and 903—Welding rods. American Brass Co., Waterbury, Conn.
PHO-SON—Low temperature brazing alloy. United Wire & Supply Corp., Providence, R. I.
PHOS-SILVER—Brazing alloys. Westinghouse Electric Corp., Pittsburgh, Pa.
PHOS-TRODE—Shielded arc phosphor bronze electrode. Ampco Metals, Inc., Milwaukee, Wis.
PHOSTUBE No. 4—Phosphor-copper brazing rod. All-State Welding Alloys Co., Inc., White Plains, N. Y.
PHOTOLOGUE—Welding catalogs, photo-offset catalogs. Photologue Publishing Co., Chicago, Ill.
PHOTOSWITCH—Electronic timers, controls, and relays. Photoswitch, Inc., Cambridge, Mass.
PHOTOVOLT—Electric timer. Photovolt Corp., New York, N. Y.
PICKER—X-ray equipment and X-ray generators. Picker X-Ray Corp., New York, N. Y.
PICKLE OFF—Spatter preventive. Thompson & Co., Oakmont, Pa.
PICKLE ON—Spatter preventive. Thompson & Co., Oakmont, Pa.
PIER—Projection & seam welders, spot. Peer, Inc., Benton Harbor, Mich.
PIERCE—Governor for controlling the speeds of gasoline driven electric welders. Pierce Governor Co., Anderson, Ind.
PIERCE SERVO—Governors. Pierce Governor Co., Anderson, Ind.
PILOTEND—Steel burner. Eclipse Fuel Co., Rockford, Ill.
PIONEER—Electrode holder and cable connectors. Detroit Electrode Holder Mfg. Co., Detroit, Mich.
PIPELINER—Welder designed for oil field use. Hobart Bros. Co., Troy, Ohio.
PIPETITE-STIK—Pipe joint compound in stik form. Lake Chemical Co., Chicago, Ill.
PISTONAIR—Hoists. Joy Mfg. Co., Pittsburgh, Pa.
PITTSBURGH—Transformers. Allis Chalmers Mfg. Co., Milwaukee, Wis.
PITTSBURGH—Valves for oxygen, hydrogen, carbon dioxide, and other high pressure cylinders. Kerotest Manufacturing Co., Pittsburgh, Pa.
PITTSBURGH—Welding rods and wire. Pittsburgh Steel Co., Pittsburgh, Pa.
PLANEWELD—Mild steel electrode. The Lincoln Electric Co., Cleveland, Ohio.
PLANOGRAPH—Oxy-acetylene cutting machine. Air Reduction Sales Co., New York, N. Y.
PLASTALLOY—Alloy mold steel for plastic molds. Henry Disston & Sons, Inc., Philadelphia, Pa.
PLASTICOTE PRESS—Press for laminating plastics, rubber and plastic moulding. Studebaker Machine Co., Maywood, Ill.
PLASTI-GLASS—Shatter-resisting, chip-proof lens for oxygen and acetylene pressure gauges. Plasti-Glass Products Co., Chicago, Ill.
PLASTI-GOGGLE—Welder's and industrial worker's goggle. Eastern Equipment Co., Willow Grove, Pa.
PLASTI-GRIP—Terminals, connectors and crimping tools. Aircraft-Marine Prod. Co., Harrisburg, Pa.
PLASTIKUT—Alloy mold steel for plastic molds. Henry Disston & Sons, Inc., Philadelphia, Pa.
PLASTIRON—Hubbing iron for plastic molds. Henry Disston & Sons, Inc., Philadelphia, Pa.
PLAS-TOUGH—Plastic goggle lenses. Willson Products, Inc., Reading, Pa.
PLIBRICO—Plastic fire brick. Plibrico Jointless Firebrick Co., Chicago, Ill.
PLUMB—Files, blacksmith and scaling hammers. Fayette R. Plumb, Inc., Philadelphia, Pa.
PLUMBER KRAK-STIK—Sealing cement in stick form. Lake Chemical Co., Chicago, Ill.
PLUM LEADER—Machinist's hammers. Fayette R. Plumb, Inc., Philadelphia, Pa.
PLURALLOY—Low hydrogen electrode. McKay Co., Pittsburgh, Pa.
PLURAMELT—Stainless clad steel. Allegheny Ludlum Steel Corp., Brackenridge, Pa.
PLY—Protective skin creams. Milburn Co., Detroit, Mich.
PLYKLEENER—Hand cleaner. Milburn Co., Detroit, Mich.
PLYKROME—Stainless-clad steel. Plykrome Corp., New York, N. Y.
PLYMOUTH—Bench and floor grinders. Clizbe Bros. Mfg. Co., Plymouth, Ind.
PNEUMATRACTOR—Tractor-compressor. Schramm, Inc., West Chester, Pa.
POGO—Resistance welder cable testers. Myron Zucker Engrg. Co., Detroit, Mich.
POLYGRAPH—Oxy-acetylene cutting machine. Air Reduction Sales Company, New York, N. Y.
POLY-KOTE—Rust preventative. Kelite Products, Inc., Los Angeles, Calif.
PONY—Steel bar clamp, "C" clamps, clamp fixtures, etc. Adjustable Clamp Co., Chicago, Ill.
POPULAR—Welding torch gas lighters. Safety Gas Lighter Co., Lynn, Mass.
POR-OS-WAY—Plastic grinding wheels. A. P. DeSanno & Son, Inc., Phoenixville, Pa.
PORT-A-BELT — Belt grinding attachment. Carborundum Co., Niagara Falls, N. Y.
PORT-A-WELD—Portable welding units. Gellid Engineering, Oak Park, Ill.
PORTAIR—Blowers. Coppus Engineering Corp., Worcester, Mass.
PORTELEVATOR—Portable elevating tables. The Hamilton Tool Co., Hamilton, Ohio.
PORTER-CABLE—Grinders of all types and stationary buffing and polishing machinery. The Porter-Cable Machine Co., Syracuse, N. Y.
PORTO-ARC—Gas-driven, a-c welder and power plant. Marquette Mfg. Co., Minneapolis, Minn.
PORTO POWER—Remotely controlled hydraulic jacks. Blackhawk Mfg. Co., Milwaukee, Wis.
PORTO-SHEAR—Portable electric shears. The Black & Decker Mfg. Co., Towson, Md.
PORTO-SHEAR—Portable electric shears. Van Dorn Electric Tool Co., Towson, Md.
PORTOVENT—Ventilating hose. American Ventilating Hose Co., New York, N. Y.
POSITIVE ARC—AC Arc welder and inert arc welder. Welding Apparatus Co., Chicago, Ill.
POWER HOUSE—Welder. Patent Specialties, Inc., Miami, Fla.
POWERON—Nozzles. American-La France Foamite Corp., Elmira, N. Y.
POWER-TWIN—Hydraulic pullers. Owatonna Tool Co., Owatonna, Minn.
POWDER WELD—Alloys, powder welding, silver brazing, blow pipes brazing, brazing alloys and brazing outfits, gas machines, brazing gas, metal spraying equipment, nozzles, torch, powder welding torches, soldering outfits, tips, soldering tips, welding gas torches, brazing torches, welding gas welders, inert gas welders, projection welding apparatus. The Powder Weld Process Co., Brooklyn, N. Y.
POWERHOUSE—Electric arc welder. Precision Welder Mfg. Co., Chicago, Ill.
POWER-PLUS—Combination A.C. welder. Permalatem Welding Alloys, Inc., Red Bank, N. J.
POWRARM—Welding positioners. Wilton Tool Manufacturing Co., Chicago, Ill.
POWROMATIC—Constant voltage welder and controls for automatic welding. Hobart Bros. Co., Troy, Ohio.
POW-R-SAFE—Electric tool tester. Fendall Co., Chicago, Ill.
PRATT & CADY—Bronze and iron valves. R-P & C Valve Div. of American Chain & Cable Co., Inc., Reading, Pa.
PRE-INSULATED—Terminals, connectors and crimping tools. Aircraft-Marine Prod. Co., Harrisburg, Pa.
PRECISION—Resistance welding machines. Precision Welder and Flexopress Corp., Cincinnati, Ohio.
PRECISION—A-C arc welders. Precision Welder Mfg. Co., Chicago, Ill.
PRE-FOS—Rust preventives and removers. Wyandotte Chemical Corp., Wyandotte, Mich.
PREMIER—Welding and cutting outfits. Burdett Oxygen Co., Cleveland, Ohio.
PREMIER—Welding wire. American Steel & Wire Co., Cleveland, Ohio.
PREMIUM—Resistance welding electrode holder. P. R. Mallory & Co., Inc., Indianapolis, Ind.
PREPO—Torch and fuel. Pressure Products Corp., Skokie, Ill.
PRESSURE BREAKER—Attachment for single-stage regulator to convert it into a 2-stage type. K-G Equipment Co., Inc., New York, N. Y.
PRESTO—Helmet headband adjustment. Sellstrom Manufacturing Co., Chicago, Ill.
PREST-O-LITE—Acetylene, air-acetylene equip., cylinders. The Linde Air Products Co., New York, N. Y.
PREST-O-WELD—Welding, cutting and metal-treating apparatus. The Linde Air Products Co., New York, N. Y.
PRESIVE—Welding positioner. Bryant Products Distributing Co., Jackson, Mich.
PRESS-RITE—Power presses. Sales Service Machine Tool Co., St. Paul Minn.
PRESSTITE—Spotweld sealers. Presstite Engineering Co., St. Louis, Mo.
PRESSTITE No. 261—Weld thru sealer. Presstite Engineering Co., St. Louis, Mo.
PRIMUS—Kerosene burners, soldering irons, blow and brazing torches. Sandvik Saw & Tool, New York, N. Y.
PROCESSED—Mild steel electrode. Champion Rivet Co., Cleveland, Ohio.
PROCESS K—Metal cleaner. Kelite Products, Inc., Los Angeles, Calif.
PROCESS K-1-8—Metal cleaner. Kelite Products, Inc., Los Angeles, Calif.
PRODUCTER—Positioner. Bentley Weldery, Inc., Syracuse, N. Y.
PROPELLAIR—Exhaust fans. Robbins & Myers, Inc., Springfield, Ohio.
PRO-CLAMP—Positioning and aligning clamps. Bernard Welding Equip. Co., Chicago, Ill.
PROGRESSIVE—Seam, flash-butt, projection pedestal, rocker-arm, multi-spot and portable gun welders, arc welders, hydraulic punching units, jigs and fixtures. Progressive Welder Co., Detroit, Mich.
PROTECTED ARC—Electrodes. Hollup Corporation, Division of National Cylinder Gas Co., Chicago, Ill.
PROTECTIVE COAT—Liquid preparation which prevents weld spatter adhesion. Hollup Corp., Division of National Cylinder Gas Co., Chicago, Ill.
PROTECT-O-METAL—Anti-spatter, liquid welding compound. G. W. Smith & Sons, Dayton, Ohio.
PROTECTO SHIELD—Face shield. Willson Products, Inc., Reading, Pa.
PROTECTOGLO—Combustion safeguard equipment. Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.
PRO-TECTO-CAPE—Welder's chrome leather safety clothing. Eastern Equipment Co., Willow Grove, Pa.
PROTECT-O-METAL—Spatter proofing compounds. G. W. Smith & Sons, Dayton, Ohio.
PROTECTOR—Germicidal lamp units. C-B Tool Co., Lancaster, Pa.
PROTECT-O-VANE—Pyrometers. Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.
PRO-TEK—Protective cream. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
PROTEX—Rust preventives. Wayne Chemical Products Co., Detroit, Mich.
PROXY—Flame-cutting equipment. Flame Cutting Equipment Co., Dania, Fla.
PUL-LIFT—Ratchet lever hoist. The Yale & Towne Mfg. Co., Philadelphia, Pa.
PULLMAX—Nibbling machines and metal cutting shears. American Pullmax Co., Inc., Chicago, Ill.
PULMOSAN—Respirators, shield-respirators, welding helmets, goggles, welders' gloves, eyeshields, acid-handling equipment, and protective clothing. Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
PULMOTER—Vinyl make apron & sleeves. Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
PURDUE—Electrode holder. Purdue Mfg. Co., Chicago, Ill.
PURE—Block and paste carbon and carbon electrodes. Pure Carbon Co., Inc., St. Marys, Pa.
PURETUNG—Tungsten welding electrodes. Tungsten & Chem. Div. of Sylvania Elec. Prod. Inc., Towanda, Pa.
PURITAN—Oxygen, hydrogen, acetylene, gases, electric welders, acetylene generators, welding and cutting equipment, welding rods, electrodes, fluxes, pre-heating outfits, pressure gauges. Puritan Compressed Gas Corp., Kansas City, Mo.
PURITAN PM-20—Oxygen masks. Puritan Compressed Gas Corp., Kansas City, Mo.
PURITE—Cast tungsten carbide products. Electrodes, inserts, sand blast nozzles and welding rods and surfacing-hardening powder. Purnell Alloy Co., Angleton, Texas.
PURITY—Flux. Purity Cylinder Gases, Inc., Grand Rapids, Mich.
PUR-METL—Flux or bronze welding cast iron. Pratt-Brayman Mfg. Co., Oscoda, Mich
PUROX—Welding, cutting and metal-treating apparatus, liquid gas and vacuum containers. The Linde Air Products Co., New York, N. Y.
PYRAMID—Babbitt metals. Magnolia Metal Co., Elizabeth, N. J.
PYRENE—Tire chains, self-closing repair links, emergency chains and chain tighteners. Pyrene Manufacturing Co., Newark, N. J.
PYRENE ANTI-FREEZE—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PYRENE FOAM—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PYRENE FOAM-AUTOMATIC—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PYRENE FOAM COMPOUND—Fire extinguisher recharges. Pyrene Manufacturing Co., Newark, N. J.
PYRENE FOAM MAKER—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PYRENE FOAM-MARINE TYPE—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PYRENE FOAM PLAYPIPE— Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PYRENE FOAM PROPORTIONING TANK— Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PYRENE FOAM RECHARGE—Fire extinguisher recharges. Pyrene Manufacturing Co., Newark, N. J.
PYRENE FREEZE-PROOF CHARGE—Fire extinguisher recharger. Pyrene Manufacturing Co., Newark, N. J.
PYRENE GARDSEAL—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PYRENE PUMP TANK—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PYRENE SODA-ACID—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PYRENE SODA-ACID RECHARGE—Fire extinguisher recharger. Pyrene Manufacturing Co., Newark, N. J.
PYRENE VAPORIZING LIQUID—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.
PYRENE WATER-TYPE—Fire extinguisher. Pyrene Manufacturing Co., Newark, N. J.

PYREX—Heat resisting glasses. Corning Glass Works, Corning, N. Y.
PYRO—Welding torch gas lighter. Safety Gas Lighter Co., Lynn, Mass.
PYROFAX—Hydrocarbon fuel gas. The Linde Air Products Co., New York, N. Y.
PYROLENE—Propane. Burdett Oxygen Co., Cleveland, Ohio.
PYROLUTE—Spatter preventive. Krembs & Co., Chicago, Ill.
PYROMARK—High temperature paint. Tempil Corp., New York, N. Y.
PYROMASTER—Indicating and recording Pyrometer. The Bristol Co., Waterbury, Conn.
PYR-O-VANE—Pyrometers. Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.

Q

QUAKER—Welding and sand blast hose. Quaker Rubber Co., Philadelphia, Pa.
Q-CHROME—High temperature refractory cements. Quigley Co., Inc., New York, N. Y.
Q-CHROMASTIC—Refractories. Quigley Co., Inc., New York, N. Y.
QUELARC—Plugs and receptacles. Pyle-National Co., Chicago, Ill.
QUA-FLEX—Fire hose. Quaker Rubber Corp., Philadelphia, Pa.
QUAKEROID—Fibre sheet. Quaker Rubber Corp., Philadelphia, Pa.
QUEEN—Bench and floor grinders. Clizbe Bros. Mfg. Co., Plymouth, Ind.
QUICK-AID FIREGUARD—Fire extinguishers. The General Detroit Corp., Detroit, Mich.
QUICK LOCKCET—"C" Clamps. Grand Specialties Co., Chicago, Ill.
QUICK-AS-WINK—Air and hydraulic control valves and couplings. C. B. Hunt & Sons, Inc., Salem, Ohio.
QUICKCET—Bar clamp. Grand Specialties Co., Chicago, Ill.
QUICK-DISCONNECT—Electrode holder. Cam-Lok Div., Empire Products, Inc., Cincinnati, Ohio.
QUICK-WEDGE—Screw-holding screw drivers. Kedman Co., Salt Lake City, Utah.
QUICKWORK—Rotary shear. Whiting Corp., Harvey, Ill.
QUICK-TRIK—Electrode holder. Jackson Products, Detroit, Mich.
QUIK-LIFT—Electric hoist. Coffing Hoist Co., Danville, Ill.
QUIKCET—Clamps & vises. Grand Specialties Co., Chicago, Ill.
QIKLINK—Cable splice. Burndy Engineering Co., Inc., New York, N. Y.
QIKTAP—Cable tee connector. Burndy Engineering Co., Inc., New York, N. Y.

R

R-2—Rust preventives and removers. Wyandotte Chemical Corp., Wyandotte, Mich.
R&IE—Clamps. Railway and Industrial Engineering Co., Greensburg, Pa.
R&M—Hoists, cranes, winches. Robbins & Myers Inc., Springfield, O.
RB—Shear weld trimmer. Morton Mfg. Co., Muskegon Heights, Mich.
RD—Floodlights. Benjamin Electric Mfg. Co., Des Plaines, Ill.
RLM STREAM FLO 40—Inspection equipment, fluorescent ltg. Benjamin Electric Mfg. Co., Des Plaines, Ill.
RLM SHIELD-FLO 40—Inspecting equipment, fluorescent ltg. Benjamin Electric Mfg. Co., Des Plaines, Ill.
RLM STREAM-FLO 100—Inspection equipment fluorescent ltg. Benjamin Electric Mfg. Co., Des Plaines, Ill.
RLM TWIN-FLO 100—Inspection equipment, fluorescent ltg. Benjamin Electric Mfg. Co., Des Plaines, Ill.
RLM TX-40—Inspection equipment, fluorescent ltg. Benjamin Electric Mfg. Co., Des Plaines, Ill.
R-M—Asbestos, products and rubber products. Raybestos-Manhattan, Inc., Passaic, N. J.
R & M—Cranes, fans, hoists. Robbins & Myers, Inc., Springfield, Ohio
R, P & C—Valves. Reading, Pratt & Cady Valve Div., American Chain & Cable Co., Inc., Reading, Pa.
R MONEL—High-carbon Monel. The International Nickel Co., Inc., New York, N. Y.
RABBIT—Swiss precision files. Grobet File Co. of America, Inc., New York, N. Y.
RABIN—Welders' gloves. Rabin Glove Co., Jersey City, N. J.
RACINE—Hydraulic pumps, pressure boosters and valve. Racine Tool & Machine Co., Racine, Wis.
RACALLOY—Reid-Avery Co., Inc. Baltimore, Md.
RACO—Electrodes and welding wire. Reid-Avery Co., Dundalk, Baltimore, Md.
RACO CAST—Electrodes for cast iron welding. Reid-Avery Co., Inc., Dundalk, Baltimore, Md.
RACO 624—Iron-powder electrode. Reid-Avery Co., Inc., Dundalk, Baltimore, Md.
RACOSPRAY—Metallizing wire. Reid-Avery Co., Inc., Baltimore, Md.
RADIAC—Grinding wheels and abrasive cutoff machines. A. P. DeSanno & Sons, Inc., Phoenixville, Pa.
RADIAGRAPH—Portable, motor driven, oxy-acetylene cutting machine. Air Reduction Sales Co., New York, N. Y.
RADIANT SPATTERPROOF—Welding lamp. Radiant Lamp Corp., Newark, N. J.
RADIUS MARKERS—For marking circles. Contour Marker Corp., Compton, Calif.
RAILENDER—Hard-facing electrode. The Champion Rivet Co., Cleveland, Ohio.
RAILFACE—Welding rods and electrodes. American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
RAILWEAR—Heavily coated electrodes. Hollup Corporation, Division of National Cylinder Gas Co., Chicago, Ill.
RAM ASSEMBLY—Hydraulic and air ram assemblies. Studebaker Machine Co., Maywood, Ill.
RAMET—Carbide. Vascoloy-Ramet Corp., Waukegan, Ill.
RANALLOY—Alloy hard-facing electrodes. The Bergstrom Alloys Corp., Reno, Nev.
RANDALL—Tip cleaner and spark lighters. Welding & Cutting Materials Co., Kansas City, Mo.
RANDALL—Soap stone holder, tip cleaner and electrode holder. Randall Manufacturing Co., North Kansas City, Mo.
RANDOLPH—Fire extinguishers. Randolph Laboratories, Inc., Chicago, Ill.
RANGER—A-C arc welder. Larkin Lectro Products Co., Pine Bluff, Ark.
RANITE—Hard-facing welding rod. Rankin Mfg. Co., Los Angeles, Calif.
RANSOME—Welding positioners, turning rolls. Ransome Machinery Company, subsidiary Worthington Corp., Dunellen, N. J.
RAN-TUNG—Mild steel tube with tungsten carbide filler. Rankin Mfg. Co., Los Angeles, Calif.
RAPID—Cable and terminal connections. Chicago Tool and Engineering Co., Chicago, Ill.
RAPID-TITAN—C clamps, jigs and fixtures. Rapid-Titan Manufacturing Co., Grand Rapids, Mich.
RAY-BAN—Glare protection lens. Bausch & Lomb Optical Co., Rochester, N. Y.
RAYTHEON—Electronic tubes for use in welding controls, miniature spot welders. Raytheon Mfg. Corp., Waltham, Mass.
READING—Steel valves and fittings. R-P & C Valve Div. of American Chain Cable Co., Inc., Reading, Pa.
READY-FLOW—Silver brazing alloy. American Platinum Works, Newark, N. J.
RECAP—Replaceable insert, spotwelding tip. Ampco Metal, Inc., Milwaukee, Wis.
RECK-RACK—Welding positioner. Blackhawk Mfg. Co., Milwaukee, Wis.
RED CENTER—Wire wheels. Pittsburgh Plate Glass Co., Baltimore, Md.
RED CHIP—High speed steel bits. Firth Sterling Steel & Carbide Corp., Pittsburgh, Pa.
RED COAT—Coated abrasives. Michigan Abrasive Co., Detroit, Mich.
RED DEVIL—Mild steel electrodes. The Champion Rivet Co., Cleveland, Ohio.
REDDY—Grinder. The United States Electrical Tool Co., Cincinnati, Ohio.
RED END— Folding wood rules. The Lufkin Rule Co., Saginaw, Mich.
RED END— Hack saw blades. Simonds Saw & Steel Co. Fitchburg, Mass.
RED FLASH—Fluxes. Arc Welding Supply Co., Bronx, N. Y.
RED HEAD—Chain Pipe Vises. Billings and Spencer Co., Hartford, Conn.
RED HEAD—Welding and lifting "C" clamps. Chicago Boiler Co., Chicago, Ill.
RED HEAD—Acetylene generators, low pressure. Harris Calorific Co., Cleveland, Ohio.
RED HEAD—Wood mallets. O. P. Link Handle Co., Salem, Ind.
RED-ARROW—Vises. Columbian Vise & Mfg. Co., Cleveland, Ohio.
REDI-ARC—A.C. welder. Marquette Mfg. Co., Inc., Minneapolis, Minn.
REDI-FLUXED—Bronze welding rod. National Cylinder Gas Co., Chicago, Ill.
REDI-GLO MARK II—Fire extinguisher. Stop-Fire, Inc., Brooklyn, N. Y.
REDI-MIX—Powdered solder and flux. Anchor Metal Co., Brooklyn, N. Y.
RED-ROD—Steel welding electrodes. Marquette Manufacturing Co., Inc., Minneapolis, Minn.
RED SEAL—Flannel gauntlet. Boss Mfg. Co., Kewanee, Ill.
RED SHIELD—Twist drills and reamers. Standard Tool Co., Cleveland, O.
RED STREAK—Circular metal saws. Simonds Saw & Steel Co., Philadelphia, Pa.
RED TANG—Files. Simonds Saw & Steel Co., Fitchburg, Mass.
RED STRIPE—Emery cloth. Clover Manufacturing Co., Norwalk, Conn.
REDO—Jigs, fixtures, welding jigs, pipe welding machines, cutting, flame positioners, welding rolls and turning bending, welders, seam. Reed Engineering Co., Carthage, Mo.
REED—Vises. Reed Manufacturing Co., Erie, Pa.
REED—Webb Corp., Webb City, Mo.
REEVES FIRE-CHIEF—Welding curtains. A. Smith and Son, Inc., Philadelphia, Pa.
REFLECTOGAGE—Ultrasonic thickness gage. Sperry Products, Inc., Danbury, Conn.
RE-FLECTO-RAY—Lenses. Chicago Eye Shield Co., Chicago, Ill.
REFLECTOSCOPE—Ultrasonic flaw detector. Sperry Products, Inc., Danbury, Conn.
REFORMED—Covered steel electrode. Arcos Corp., Philadelphia, Pa.
REFRAX—Refractories, bricks and special shapes. The Carborundum Co., Niagara Falls, N. Y.
REGO—Oxygen, acetylene, hydrogen manifolds and regulators, air regulators, medical oxygen therapy regulators and cylinder valves. The Bastian-Blessing Co., Chicago, Ill.
REGO GX—Welding torch. National Cylinder Gas Co., Chicago, Ill.
REHEAT—Asbestos sheet. Quaker Rubber Corp., Philadelphia, Pa.
REINER—Portable acetylene generator. Reiner and Campbell, Elizabeth, N. J.
RELATRUL BALANCER—Proportioning relay. Automatic Temperature Control Co., Inc., Philadelphia, Pa.
RELIABLE—Screw plate sets. Mayhew Steel Products, Inc., Shelburne Falls, Mass.
RELIATRON TUBES—Electronic tubes. Westinghouse Electric Corp., Pittsburgh, Pa.
RELIA-WELD—Flash welders. Swift Electric Welder Co., Detroit, Mich.
RELIEF—Fire hose. Republic Rubber Div., Lee Rubber & Tire Corp., Youngstown, Ohio.
RELTOOL—Cutting tools. Reltool Corp., Milwaukee, Wis.
REMONT—File holder. Remont Mfg. Co., Lombard, Ill.
REMOTROL—Remote controlled hydraulic jacks and pullers. Templeton, Kenly & Co., Broadview, Ill.
REMOVENE—Cleaner, metal. Krembs & Co., Chicago, Ill.
REP—Fluxes, soldering. Puritan Compressed Gas Co., Kansas City, Mo.
REPEATER-BRUSH—Weld cleaning hammer. Bernard Welding Equipment Co., Chicago, Ill.
REPUBLIC—Sand blast, steam, dual line welding and ventilating hose and rubber mallets. Republic Rubber Div., Lee Rubber & Tire Corp., Youngstown, Ohio.
REPUBLIC—Steel and electric welded pipes, casing, tubing, etc. Republic Steel Corp., Cleveland, Ohio.
REPUBLIC DOUBLE STRENGTH—Copper nickel molybdenum high tensile steel. Republic Steel Corp., Cleveland, Ohio.
RESBOND—Coated abrasive. Clover Manufacturing Co., Norwalk, Conn.
RESINAL—Cloth belts. Behr-Manning Corp., Troy, N. Y.
RESISTAL—Chipping goggles. Harry Buegeleisen, Inc., Brooklyn, N. Y.
RESISTO-LOY—Hard surfacing metal. Resisto-Loy Co., Grand Rapids, Mich.
RESOTRON—Mobile x-ray units. General Electric Co., X-Ray Dept., Milwaukee, Wis.
RETORT CEMENT—Cement high temperature. Quigley Co., Inc., New York, N. Y.
REVERE BRAZING METAL—Brazing metal. Revere Copper and Brass, Inc., New York, N. Y.
REVERE ELECTROLYTIC COPPER—Copper wire. Revere Copper and Brass, Inc., New York, N. Y.
REVERE 456—Bronze welding rod. Revere Copper and Brass, Inc., New York, N. Y.
REVERE MANGANESE BRONZE—Bronze welding rods. Revere Copper and Brass, Inc., New York, N. Y.
REVERE PHOSPHOR BRONZE—Tin bronze welding rods. Revere Copper and Brass, Inc., New York, N. Y.
REVERE PHOSPHOR DEOXIDIZED COPPER—Phosphor deoxidized copper welding rods. Revere Copper and Brass, Inc., New York, N. Y.
REVERE SILICON DEOXIDIZED COPPER—Silicon deoxidized copper. Revere Copper and Brass, Inc., New York, N. Y.
REVERS-O-CHARGE—Welding control equipment. Weltronic Co., Detroit, Mich.
REVOLVATOR—Hand and electric trucks, portable and freight elevators and turntables. Revolvator Co., North Bergen, N. J.
REX—Fans and blowers. Air Controls, Inc., Cleveland, Ohio.
REX—Resistance welders. Rex Welder & Engineering Co., Kansas City, Mo.
REX—Sprocket chains. Chain-Belt Co., Milwaukee, Wis.
REX TUBE—Brass & steel tubing & ventilating tubing. Flexonics Corp., Maywood, Ill.
REX WELD—Steam hose. Flexonics Corp., Maywood, Ill.
REX-A-LITE—Hard-facing alloys. Sight Feed Generator Co., West Alexandria, Ohio.
REXARC—Hard facing and manganese electrodes, and automatic welders and positioners. Sight Feed Generator Co., West Alexandria, Ohio.
REXTUNG—Tungsten carbide, tubed and pegs. The Sight Feed Generator Co., W. Alexandria, Ohio.
REXWELD—Electrodes. Crucible Steel Co. of America, New York, N. Y.
REYNOLDS—Aluminum and aluminum alloys. Reynolds Metal Co., Louisville, Ky.
REZ-SIZE—Abrasives. Clover Mfg. Co., Norwalk, Conn.
REZISTAL—Electrodes. Crucible Steel Co. of America, New York, N. Y.
RIGID—Pipe cutters wheels, etc., Collmer Brothers, South Bend, Ind.
RIDO DUST—Chipping goggles. Harry Buegeleisen, Inc., Brooklyn, N. Y.
RIDO RAY—Welders' goggles. Harry Buegeleisen, Inc., Brooklyn, N. Y.
RIEHLE—Machines for testing of materials. Riehle Testing Machine Div., American Machine & Metals, Inc., E. Moline, Ill.
RIGGER—Cutting torches for acetylene, propane and natural gas. Universal Cutting & Welding Equipment Mfg. Co., Inc., Fort Lauderdale, Fla.
RIPLEY RIVET GUN—Rivet gun. Ripley Co., Inc., Middletown, Conn.
RIPLEY WELDING TIMER—Timer for spot welding. Ripley Co., Inc., Middletown, Conn.

RIVERSIDE—Phosphor bronze alloys, uncoated welding rods. Riverside Metal Co., Riverside, Burlington Co., N. J.
RIVWELD—Stud welder fastener. Nelson Stud Welding, Div. of Morton Gregory Corp., Lorain, Ohio.
ROBERTS—Tube-copper. J. N. Fauver Co., Inc., Detroit, Mich.
ROBOTECTOR—Electronic water saver. Robotron, Inc., Detroit, Mich.
ROBOTRON—Industrial electronic weld timers. Robotron, Inc., Detroit, Mich.
ROBVON—Welding fitting, weld back-up rings, stainless steel. The Robvon Corp., Denver, Colo.
ROCKET—Trolley. David Round & Son, Cleveland, Ohio.
ROCKET 24—Iron-powder electrode. Hobart Bros. Co., Troy, Ohio.
ROCKET "61"—Electric hoist. David Round & Son, Cleveland, Ohio.
ROCKET-ROD—Mild steel coated electrode AC or DC. Hobart Bros. Co., Troy, Ohio.
ROCKWELL—Hardness testers. Wilson Mechanical Instrument Co., New York, N. Y.
ROD-HOD—Electrode container. Marquette Mfg. Co., Inc., Minneapolis, Minn.
ROD SAVER—Electrode holders. Martin Wells, Los Angeles, Calif.
RODEO—Safety glasses. Bausch & Lomb Optical Co., Rochester, N. Y.
ROEBLING—Welding wire and cables. John A. Roebling's Sons Co., Trenton, N. J.
ROETEMP—Magnet wire. John A. Roebling's Sons Corp., Trenton, N. J.
ROEWELD—Welding cable. John A. Roebling's Sons Co., Trenton, N. J.
ROLLALOY—Electrode for rebuilding rolls. Industrial Overlay Metals, Inc., Eaton, Ohio.
ROL-MAN—Electric repointer bars, plate, bars (round and flat). Manganese Steel Forge Co., Philadelphia, Pa.
ROLTOE—Toe lift hydraulic jacks. Templeton, Kenly & Co., Broadview, Ill.
ROMAN BRONZE—Bronze rod. Revere Copper and Brass, Inc., New York, N. Y.
ROME 40 & 40—Welding cable. Rome Cable Corp., Rome, N. Y.
ROSS—Control and operating valves. Ross Operating Valve Co., Detroit, Mich.
ROTAIR FURNACE—Furnace. Eclipse Fuel Engineering Co., Rockford, Ill.
ROTOR—Pneumatic tools. Rotor Tool Co., Cleveland, Ohio.
ROUGH SERVICE—Incandescent lamps. Champion Lamp Works, Lynn, Mass.
ROUND FILE IMPROVED—Gas lighters. Safety Gas Lighter Co., Lynn, Mass.
ROUND FILE POPULAR—Gas lighters. Safety Gas Lighter Co., Lynn, Mass.
ROXCO—Pipe wrenches, tube cutters and strap wrenches. Trimont Mfg. Co., Div. of Aetna Industrial Corp., Roxbury, Mass.
ROYAL—Hardening compound. Anti-Borax Compound Co., Fort Wayne, Ind.
ROYAL ARC 200A—Portable arc welder. Royal Arc Industries, Inc., Chillicothe, Ill.
ROYAL CLIPPER—Metal cutter and shrinker; metal stretcher and crimper; cable splicing and joggling blocks; rivet cutter. C. B. Tool Co., Lancaster, Pa.
ROYAL CREST—Press type spot welder. The Central Sales Corp., Chicago, Ill.
ROYALITE—Grinding wheels. U. S. Rubber Co., Fort Wayne, Ind.
RSNI—Silver brazing alloy. Handy & Harman, New York, N. Y.
RUBBERLOKT—Rotary wire brushes. Hewitt Rubber Div., Hewitt-Robins, Inc., Buffalo, N. Y.
RUBY'S—Stainless steel soldering flux. The Ruby Chemical Co., Columbus, Ohio.
RUBY FLUID—Soldering and tinning flux and cored solder. The Ruby Chemical Co., Columbus, Ohio.
RUEMELIN—Welding fume collector. Ruemelin Mfg. Co., Milwaukee, Wis.
RUF-TRED—Electrode holder. Metallizing Engineering Co., Inc., Long Island City, N. Y.
RUFLUX 61—Rutile milled. Titanium Alloy Mfg. Div., National Lead Co., New York, N. Y.
RUFLUX 84—Rutile granular. Titanium Alloy Mfg. Div., National Lead Co., New York, N. Y.
RUFLUX P—Potassium titanate. Titanium Alloy Mfg. Div., National Lead Co., New York, N. Y.
RUFLUX S—Sodium titanate. Titanium Alloy Mfg. Div., National Lead Co., New York, N. Y.
RUFLUX T—Zirconium oxide. Titanium Alloy Mfg. Div., National Lead Co., New York, N. Y.
RUPTAIR—Circuit breakers. Allis-Chalmers Mfg. Co., Milwaukee, Wis.
RUPTOR—Circuit breakers Allis-Chalmers Mfg. Co., Milwaukee, Wis.
RUSSELL—Welders' gloves. Frank Russell Glove Co., Berlin, Wis.
RUST-I-CIDE—Non-rusting soldering flux for soldering iron or steel. Rusticide Products Co., Cleveland, Ohio.
RUSTICON—Rust preventives. Philadelphia Quartz Co., Philadelphia, Pa.
RUST-BLOC No. 20—Rust preventive. Turco Products, Inc., Los Angeles, Calif.
RUST-OLEUM—Rust preventive coating. Rust Oleum Corp., Evanston, Ill.
RUSTRIPPER—Alkaline deruster. Oakite Products, Inc., New York, N. Y.
RUST-SOL—Rust remover. Klem Chemical, Inc., Dearborn, Mich.
RUST-TOX—Preparation for preventing rust. Skybrite Co., Cleveland, Ohio.
RUST VETO—Rust preventive. E. F. Houghton & Co., Philadelphia, Pa.
RYCASE—Free machining manganese steel. Joseph T. Ryerson & Son, Inc., Chicago, Ill.
RYCROME—Heat treated alloy steel. Joseph T. Ryerson & Son, Inc., Chicago, Ill.
RYCUT—Free machining alloy steel. Joseph T. Ryerson & Son, Inc., Chicago, Ill.
RY-DIE—Air hardening tool steel. Joseph T. Ryerson & Son, Inc., Chicago, Ill.
RYERTEX—Phenolic laminated plastic. Joseph T. Ryerson & Son., Inc., Chicago, Ill.

S

6S—Electrode holder. Martin Wells, Inc., Los Angeles, Calif.
S.C.S. No. 7—Flux. Farrelloy Co., Philadelphia, Pa.
SF—Acetylene generators, soldering and brazing equipment, welding and brazing fluxes, accessories, etc. Sight Feed Generator Co., West Alexandria, Ohio.
S-F—Acetylene generators. Sight Feed Generator Co., West Alexandria, Ohio.
SGI—Acetylene; helium; nitrogen; oxygen. Steele Gases, Inc., Chicago, Ill.
SM—A-C—D-C electrode. Harnischfeger Corp., Milwaukee, Wis.
S MONEL—Silicon-bearing monel. The International Nickel Co., Inc., New York, N. Y.
S-M-S—Resistance welder electrodes and tips, rod stock, forgings and castings, seam welding wheels and rolls, flash and projection welding dies, electrode holders, etc. S-M-S Corp., Detroit, Mich.
SR—Corrosion and heat resistant alloys. Uniworld Research Corp. of America, Cleveland, Ohio
SR-4—Strain gauge. Baldwin Southwark Div., The Baldwin Locomotive Works, Philadelphia, Pa.
S.R.P.—Rust preventative. L. Sonneborn Sons, Inc., New York, N. Y.
SS HIGH STRENGTH—Alloy welding rod. Steel Sales Corp., Chicago, Ill.
SW—Line of electrodes. A. O. Smith Corp., Milwaukee, Wis.
SW 44 and 45—Iron-powder electrodes. A. O. Smith Corp., Milwaukee, Wis.
SWWCO—Shear blades or knives. Simonds Worden, White Co., Dayton, Ohio.
SADCO—Oxygen and acetylene. Houston Oxygen Co., Inc. Houston, Texas.
SAF-HED-HAT—Safety hat. United States Safety Service Co., Kansas City, Mo.
SAF-I-Duo—Cover goggle. United States Safety Service Co., Kansas City, Mo.
SAF-I-FLEX—Goggle. United States Safety Service Co., Kansas City, Mo.
SAF-I-LENS—Lenses, welding and chipping. United States Safety Service Co., Kansas City, Mo.
SAF-I-SHIELD—Chippers goggles. United States Safety Service Co., Kansas City, Mo.
SAF-I-SPECS—Spectacle type goggle. United States Safety Service, Kansas City, Mo.
SAF-I-WELD—Welding helmet. United States Safety Service Co., Kansas City, Mo.
SAF-T—Leather safety garments, leather and asbestos curtains. Aljay Mfg. Co., Inc., Philadelphia, Pa.
SAF-T-CUT—Abrasive discs, wheels. Bay State Abrasive Products Co., Westboro, Mass.
SAF-VUE—Thermacote Welding Prods., Inc., Newark, N. J.
SAFCO—Safety clothing and equipment. Safety Clothing and Equipment Co., Cleveland, Ohio.
SAFE-AIRE—Dust collectors suitable for use in various dust collecting. Ralph Maitland, Cleveland Ohio.
SAFE-T-VIS—Protective goggles. The Univis Lens Co., Dayton, Ohio.
SAFEWAY—Hand operated chain hoists. Wright Hoist Div., American Chain & Cable Co., Inc., York, Pa.
SAFE-WELD—Welding plates. Flood Safety Products Co., Chicago, Ill.
SAFE-WELD—Welding helmets. E. D. Bullard Co., San Francisco, Calif.
SAFETY—File handles. Remont Mfg. Co., Lombard, Ill.
SAFETY—Grinding Wheels. Simonds Worden, White Co., Dayton, Ohio.
SAFETY CIRCLE—Motors. Allis-Chalmers Mfg. Co., Milwaukee, Wis.
SAFETY PULL—Ratchet lever hoist. Coffing Hoist Co., Danville, Ill.
SAFETY SERVICE—Welding helmets. Safety Equipment Service Co., Cleveland, Ohio.
SAFLEX—Square D Co., Detroit, Mich.
SAFRONT—Pneumatic welder timer. Square-D Co. Industrial Controller Div., Milwaukee, Wis.
SAFTEX—Hard-resin abrasive grinding wheel. Metal Removal Co., Chicago, Ill.
SALEM—Salem ladles, kettles and skimmers. The Salem Tool Co., Salem, Ohio.
SAL BRICK—Solid sal ammoniac for cleaning and tinning soldering irons. American Solder and Flux Co., Philadelphia, Pa.
SALSBURY—Pneumatic air hammer. Salisbury Corp., Los Angeles, Calif.
SAM—Semiautomatic welding head manipulator. The Pandjiris Weldment Co., St. Louis, Mo.
SAMCO—Clamps, tool handles, ladles, pots and kettles, circular and hole saws, cylinder trucks. Syracuse Alloy Metals Corp., Syracuse, N. Y.
SAMSON—Hand power punches, shears, bar cutters and bar benders and power punches, combination punching and shearing machines. Julius Blum & Co., Inc., New York, N. Y.
SAMSON—Grinding wheel dressers. G. J. Wellen Manufacturing Co., San Francisco, Calif.
SAMSON—Wire wheel and rotary wire brushes. The Manufacturers Brush Co., Cleveland, Ohio.
SAND-O-FLEX—Contour sanding wheel. Merit Prod., Inc., Culver City, Calif.
SAND SCREEN—Open-mesh abrasive. The Carborundum Co., Niagara Falls, N. Y.
SANIGLAS—Spectacle type goggle with side shields. American Optical Co., Southbridge, Mass.
SANI-SPRAY—Goggle spray station, cleaning fluid for goggles, cleaning tissues. Allen Optical Co., Buffalo, N. Y.
SANKEY—Foot and shin guards. Safety Clothing & Equip. Co., Cleveland, Ohio.
SAOCO—Oxygen acetylene. Houston Oxygen Co., Houston, Tex.
SATINARC—Modified type of sul-coated electrode. Universal Power Co., Cleveland, Ohio.
SAUNDERS—Pipe cutters' wheels, etc. Collmer Bros., South Bend, Ind.
SAW GUN—Power driven hack saw and file. Mid-States Welder Mfg. Co., Chicago, Ill.
SAXE—Seat and erection clip. J. H. Williams & Co., Buffalo, N. Y.
SCAIFLUX 21 and 22—Silver brazing fluxes. Scaife Co., Oakmont, Pa.
SCALEMASTER—Hammers; chipping and scaling. The Fibre-Metal Products Co., Chester, Pa.
SCALEMASTER—Weld cleaning tool. Industrial Products Co., Philadelphia, Pa.
SCALE-OFF—Rust and scale remover. Kelite Products, Inc., Los Angeles, Calif.
SCHOITZ—Automatic cutting machine. Schoitz Engineering Works, Waterloo, Iowa.
SCIAKY—Resistance welding equipment which includes spot welders, seam and roll spot welders, flash-butt welders, projection welders, multiple head spot welders and portable equipment. A-C and D-C resistance welders. Sciaky Bros. Chicago, Ill.
SCI-TRON—Current integrator. Venus Products Co., Chicago, Ill.
SCOPEMASTER—Fluorescent x-ray unit. General Electric Co., X-Ray Dept., Milwaukee, Wis.
SCORFILL—Alloy used to fill scored automobile and other cylinders. Smith Welding Equipment Corp., Minneapolis, Minn.
"SCOTCH"—Tapes. Minnesota Mining & Mfg. Co., St. Paul, Minn.
SCOUT—Utility bench vise. Wilton Tool Mfg. Co., Chicago, Ill.
SCRATCHMASTER—Wire brushes. The Fibre-Metal Products Co., Chester, Pa.
SCRUGUN—Electric screw drivers. Black & Decker Mfg. Co., The, Towson, Md.
SCULLGUARDS—Safety hats. Mine safety Appliances Co., Pittsburgh, Pa.
SE-CO—Cylinder valve. Security Valve Co., Los Angeles, Calif.
SEACO—Hard-surfacing electrodes. Stulz-Sickles Co., Newark, N. J.
SEAL KRAX—Solder bars. Modern Engineering Co., Inc., St. Louis, Mo.
SEAL-OFF—Solenoid operated air valves. The Taylor-Winfield Corp., Warren, Ohio
SEAL-TIGHT—A-C arc welders. Will-Weld Mfg. Co., Inc., Omaha, Neb.
SEAL-X-O—Filler for rough and porous welds. Metal Bond Mfg. Co., St. Louis, Mo.
SEALTITE—Electrical wiring conduit. American Metal Hose branch, American Brass Co., Waterbury, Conn.
SEARCHLIGHT—Acetylene cylinders. Air Reduction Sales Co., New York, N. Y.
SECUREYE—Face shield. Pulmosan Safety Equipment Corp., Brooklyn, N. Y.
SECURITY FLEX—Arc welding cable. Anaconda Wire & Cable Co., New York, N. Y.
SEEL COTE—Weld protection alloy. Fusion Engineering, Cleveland, Ohio.
SEEM-WELDO—Seam weld timer. National Time and Signal Corp., Detroit, Mich.
SEL BLUE—White filament blue lens. Sellstrom Manufacturing Co., Chicago, Ill.
SEL GREEN—Hardened green lens. Sellstrom Manufacturing Co., Chicago, Ill.
SEL HARD—Hardening clear lenses. Sellstrom Manufacturing Co., Chicago, Ill.
SEL-O-MATIC—Adjustment for helmets. Sellstrom Manufacturing Co., Chicago, Ill.
SEMCO—Dies, press equipment, special machines. Service Machine Co., Elizabeth, N. J.
SEL SAFE—Laminated clear lens. Sellstrom Mfg. Co. Chicago, Ill.
SEL XX—Goggle and helmet lens. Sellstrom Mfg. Co., Chicago, Ill.
SELLSTROM SAFEGUARDS—Goggles, welding helmets. Sellstrom Mfg. Co., Chicago, Ill.
SEMPUN—Portable kit for magnetic particle inspection. Rice-Peterson Sales, Inc., Palo Alto, Calif.
SENECA GASWELD—Electric and gas welding wire. Seneca Wire & Mfg. Co., Fostoria, Ohio.
SERVICE-LITE—Floodlights. Benjamin Electric Mfg. Co., Des Plaines, Ill.
SERV-RITE—Protecting tubes. Claud S. Gordon Co., Chicago, Ill.
SESCO—Cam clamp. Special Engineering Service, Inc., Detroit, Mich.
770 FLUX—Submerged arc flux. Lincoln Electric Co., Cleveland, Ohio.

SEYMOUR—Bronze welding rods. The Seymour Mfg. Co., Seymour, Conn.
SHAPE-RITE—Shapers. Sales Service Machine Tool Co., St. Paul, Minn.
"SHAW BOX"—Electric cranes. Manning, Maxwell & Moore, Inc., Shaw-Box Crane & Hoist Div., Muskegon, Mich.
SHAWINIGAN—Calcium carbide. Shawinigan Products Corp., New York, N. Y.
SHEARITE—Cutting tool. Aircraft-Marine Prod. Co., Harrisburg, Pa.
SHELBY—Seamless steel tubing. National Tube Co., Div. of U. S. Steel Corp., Pittsburgh, Pa.
SHELL INDUSTRIAL GAS—Liquefied petroleum gas. Shell Oil Co., Inc., New York, N. Y.
SHEPARD-NILES—Electric cranes and hoists. Stryco Mfg. Co., San Francisco, Calif.
SHERMAN—Couplings and fittings and connectors and lugs. H. B. Sherman Mfg. Co., Battle Creek, Mich.
SHIELD-ARC—D-C welding machines and electrodes. The Lincoln Electric Co., Cleveland, Ohio.
SHIELD BRAND—Twist drills, grinding wheel dressers, bolt stocks and dies. Standard Tool Co., Cleveland, Ohio.
SHIFTWEIGHT—Wire reels. Moslo Machinery Co., Cleveland, Ohio.
SHIPCO—Steel welding wire and aluminum welding rods. Superior Oxy-Acetylene Machine Co., Hamilton, Ohio.
SHOBER—Electrodes and cable connectors. Shober Sales Co., Stockton, Calif.
SHOCKLESS—Center drills. Reltool Corp., Milwaukee, Wis.
SHOOT-A-LITE—Gas lighter. Shoot-A-Lite Corporation, New York, N. Y.
SHOP MULE—Welding tractor. The Buda Co., Harvey, Ill.
SHOPKING—Bench vise. Wilton Tool Mfg. Co., Chicago, Ill.
SHORTSTUB—Electrode holders. Bernard Welding Equipment Co., Chicago, Ill.
SHORTY—Portable electric drill. Black & Decker Mfg. Co., The, Towson, Md.
SHRADER—Magnetic welding positioners and contractors, flame-cutting guides and inspection equipment. F. W. Shrader Co., Culver City, Calif.
SHUR-FLO—Automatic interlock (flow switch). Hays Mfg. Co., Erie, Pa.
SHURLITE—Torch and gas lighters and flints. G. C. Fuller Mfg. Co., Cincinnati, Ohio
SIERRA—Welding flux. Sierra Welding Flux Co., Temple City, Calif.
SIGHT FEED—Portable and stationary acetylene generators and acetylene compressing plants, welding equipment and accessories. Sight Feed Generator Co., West Alexandria, Ohio
SIGMA—Mig (metal inert-gas) welding equipment. The Linde Air Products Co., New York, N. Y.
SIL-AID—Silver brazing alloys. United Wire & Supply Corp., Providence, R. I.
SIL-BOND—Silver brazing alloys. United Wire &
SIL-CO—Low temperature brazing alloy. United Wire & Supply Corp., Providence, R. I.
SILBRAZ—Silver brazed joints. Walworth Co., New York, N. Y.
SIL-CARB—Silicorn carbide papers and cloths. Clover Manufacturing Co., Norwalk, Conn.
SILENT HOIST—Winches and capstans. Silent Hoist & Crane Co., Brooklyn, N. Y.
SILENTVANE—Exhaust Fans. Westinghouse Electric Corp., Pittsburgh, Pa.
SIL-FLUX—Brazing fluxes. United Wire & Supply Corp., Providence, R. I.
SIL-FOS—Silver brazing alloy. Handy & Harman, New York, N. Y.
SILFRAM—Cast hard-facing rod. Stoody Co., Whittier, Calif.
SIL-GON—Low temperature brazing alloy. United Wire & Supply Corp., Providence, R. I.
SIL-LO—Low temperature brazing alloy. United Wire & Supply Corp., Providence, R. I.
SIL-LOY—Low temperature brazing alloy. United Wire & Supply Corp., Providence, R. I.
SIL GREEN— Hardened lens. Sellstrom Mfg. Co., Chicago, Ill.
SILK HAT—Tinning compounds and fluxes. Alwarth Chemical Corp., New York N. Y.
SIL-TEX—Low temperature brazing alloy. United Wire & Supply Corp., Providence, R. I.
SIL-TITE—Silver brazing alloys. United Wire & Supply Corp., Providence, R. I.
SILTUBE No. 1—Low melting silver brazing rod. All-State Welding Alloys Co., Inc., White Plains, N. Y.
SILVALOY—Silver brazing alloys and fluxes. The American Platinum Works, Newark, N. J.
SILVALOY—Alloy steel, shafting steel. Pyramid Steel Co., Cleveland, Ohio.
SILVALOY—Silver solders. Steel Sales Corp., Chicago, Ill.
SILVALOY—Welding, brazing and soldering flux. The Linde Air Products Co., New York, N. Y.
SILVER—Welding electrodes. American Agile Corp., Cleveland, Ohio.
SILVER FLASH—Hack blades, hand and power. E. C. Atkins & Co., Indianapolis, Ind.
SILVER MAGIC—Silver solder. Universal Welder Corp., Cleveland, Ohio.
SILVER PHOSTUBE—Phosphor copper silver brazing rod. All-State Welding Alloys, Inc., White Plains, N. Y.
SILVER STAR—Steel. Firth Sterling Steel & Carbide Corp., McKeesport, Pa.
SILVER STEEL—Circular saws, hacksaw blades, files. E. C. Atkins & Co., Indianapolis, Ind.
SILVER STREAK—Aluminum oxide abrasive coated cloth in disc and roll form. Abrasive Products, Inc., South Braintree, Mass.
SILVER STREAK—Pneumatic drills. Joy Mfg. Co., Pittsburgh, Pa.
SIMONDS—Metal cutting band saw blades. Simonds Saw & Steel Co., Fitchburg, Mass.
SIMPLEX—Portable crane. David Round & Son, Cleveland, O.
SIMPLEX—Jacks. Templeton, Kenly & Co., Broadview, Ill.
SIMPLEX—Abrasive belt grinders. Walls Sales Corp., New York, N. Y.
SIMPLEX—Electrode holder. The Fibre-Metal Products Co., Chester, Pa.
SIMPLEX—Oxy-acetylene welding rod. Air Reduction Sales Co., New York, N. Y.
SIMPLEX-JENNY—Center hole, hydraulic puller. Templeton, Kenly & Co., Broadview, Ill.
SINGER—Wearing apparel such as coats, overalls, bibs, sleeves, etc. Singer Leather Clothing Co., Philadelphia, Pa.
SITUFT—Brushes. The Osborn Mfg. Co., Cleveland, Ohio.
"62" INCONEL—Electrode for welding inconel. International Nickel Co., Inc., New York, N. Y.
"64" K MONEL—Electrode for welding "K" monel. International Nickel Co., Inc., New York, N. Y.
600—Electrode for arc welding of cast iron. C. E. Phillips & Co., Detroit, Mich.
636-SERIES—Filters and dryers for gas and air. The Gas Flux Co., Mansfield, Ohio.
660 FLUX—Submerged arc flux. Lincoln Electric Co. Cleveland, Ohio.
6N6-(M2)—Molybdenum high speed steel. Henry Disston & Sons, Inc., Philadelphia, Pa.
SKILTOOLS—Portable saws, drills, grinders, sanders, etc. Skilsaw Inc., Chicago, Ill.
SKIP TOOTH—Pipe die. Nye Tool Co., Chicago, Ill.
SKULLGUARD—Protective hat combined with a welding shield. Mine Safety Appliances Co., Pittsburgh, Pa.
SKULLGUARD—Welding shield helmet, welding shield. Mine Safety Appliances Co., Pittsburgh, Pa.
SLAGO—Dross reclaimer. Farralloy Co., Philadelphia, Pa.
SLAIDARC—Coated stainless electrodes. Universal Welder Corp., Cleveland, Ohio.
SLAP-ON—Plow share reclaiming units. Wiese Plow Welding Co., Perry, Iowa
SLIP-ON—Cartridge renewal for a gas lighter. Safety Gas Lighter Co., Lynn, Mass.
SLIP-ON—Soldering tip. Anzick Mfg. Co., Van Dyke, Mich.
SLO-DRIVE—Drill press speed reducer. Cardinal Machine Co., Glendale, Calif.
SMITH-CLAMP—Pipe fittings and pipe welding clamp. Pipe Line Development Co., Cleveland, Ohio
SMITH DOLAN—Preheating equipment. Electric Arc Inc., Newark, N. J.
SMITH'S—A-C welding and cutting torches, regulators, A-C arc welders, welding rods and electrodes, accessories and supplies, preheating torches, acetylene generators, etc. Smith Welding Equipment Corp., Minneapolis, Minn.
SMITHWAY—Welding electrodes and machines. A. O. Smith Corp., Milwaukee, Wis.
SMOOTH-ON—Iron, steel, aluminum and bronze cements. Smooth-On Mfg. Co., Jersey City, N. J.
SMOOTH-RUN—Abrasive belts, bands and sleeves. Clover Manufacturing Co., Norwalk, Conn.
SNAP-LOCK—Plier wrench. Seymour Smith & Son, Inc., Oakville, Conn.
SNAP-TITE—Hose couplers. Snap-Tite, Inc., Erie, Pa.
SNUGFIT—Wire pipe hooks. The Paine Co., Chicago, Ill.
SOCKET END WELDOLETS—Forged pipe welded fittings. Bonney Forge & Tool Works, Allentown, Pa.
SOCO—Oxygen and acetylene. Houston Oxygen Co., Houston, Tex.
SOD-LOOM—Aluminum solder. Omaha Welding Co., Omaha, Neb.
SOD-R-BRAZE—Air acetylene torch. National Cylinder Gas Co., Chicago, Ill.
SOFTARC—Lime drawn electrode. Universal Power Corp., Cleveland, Ohio.
SOFTCAST A—Shielded arc electrode. Hobart Brothers Co., Troy, Ohio.
SOFTCAST C—Coated electrode. Hobart Brothers Co., Troy, Ohio.
SOFT IRONWELD—Coated iron electrode. Steel Sales Corp., Chicago, Ill.
SOFTWELD—Cast iron electrode. Lincoln Electric Co., Cleveland, Ohio.
SOFTWELD—Welding flux. General Welding & Equipment Co., Boston, Mass.
SOL-A-DIE—Forming dies. Solar Aircraft Co., San Diego, Calif.
SOL-CON—Welding cable connector. Tweco Products Co., Wichita, Kans.
SOL-FLUX—Soldering flux. Klem Chemicals, Inc., Dearborn, Mich.
SOLAR—Stainless steel welding flux. Victor Equipment Co., San Francisco, Calif.
SOLDALOY—Copper alloys for soldering iron tips. P. R. Mallory & Co., Inc., Indianapolis, Ind.
SOLDERING FLUID—Soldering fluids. Johnson Manufacturing Co. Mount Vernon, Iowa.
SOLDER-GUN—Fluxless soldering-magneto-strictive transducer. Alcar Instruments, Inc., New York 22, N. Y.
SOLDER-IT—Metallic compound to seal leaks in boilers, radiators, cracked cylinder heads, water jackets or engine blocks. York Engineering Co., Chicago, Ill.
SOLDER FLUX—Flux for repairing scored cylinders and for other soldering work. Smith Welding Equipment Corp., Minneapolis, Minn.
SOLDER-QUIK—Soldering tool. Stark Mfg. Co., Tuscaloosa, Ala.
SOLISTRAND—Terminals, connectors and crimping tools. Aircraft-Marine Prod. Co., Harrisburg, Pa.
SOMMER & ADAMS—Special machinery. The Federal Machine & Welder Co., Warren, Ohio.
SONITE—Cover glass. Willson Products, Inc., Reading, Pa.
SONIZON—Ultrasonic thickness test instrument. Magnaflux Corp., Chicago, Ill.
SONOBOND—Unit for fluxless soldering. Aeroprojects Inc., West Chester, Pa.
SONOGEN—Ultrasonic power generator. Branson Ultrasonic Co., Stamford, Conn.
SOUTHWARK—Hydraulic and special machinery. Baldwin Southwark Division, The Baldwin Locomotive Works, Philadelphia, Pa.
SOUTHWARK-TATE-EMERY—Testing machines. Baldwin Southwark Division, The Baldwin Locomotive Works, Philadelphia, Pa.
SPAR-KING—Tool bit. Spartan Saw Works, Inc., Springfield, Mass.
SPAR-KUT—Metal band saw stock. Spartan Saw Works, Inc., Springfield, Mass.
SPAREX—Rust and scale remover. American Chemical & Flux Co., Brooklyn, N. Y.
SPARGROUND—Tool bits. Spartan Saw Works, Inc., Springfield, Mass.
SPARKETTE—Burner igniters. Eclipse Fuel Engineering Co., Rockford, Ill.
SPAT ELIMINATOR 106—Anti-spatter compound. York Engineering Co., Chicago, Ill.
SPAT-R-PRUF—Spatter preventative. York Engineering Co., Chicago, Ill.
SPATTER BAN—Coated cover plates. Kimball Safety Products Co., Cleveland, Ohio.
SPATTER PROOF—Plastic cover lens. Willson Products, Inc., Reading, Pa.
SPATTER-EX—Spatter preventive. Wayne Chemical Products Co., Detroit, Mich.
SPATTER-NOX—Liquid material for brushing, or spraying, for eliminating weld spatter sticking. Universal Welding Corp., Cleveland, Ohio.
SPATTER-OFF—Paste for elimination of weld spatter sticking. Universal Welding Corp., Cleveland, Ohio.
SPATTER-SHIELD—Weld spatter coating. Marquette Mfg. Co., Inc., Minneapolis, Minn.
SPATTERPROOF—Lamp to withstand hot weld spatter and rough handling. Radiant Lamp Corp., Newark, N. J.
SPECTI-GOGGLE—Spectacle type goggles. Eastern Equipment Co., Inc., Willow Grove, Pa.
SPEC-PRO-TECTOR—Welder's and industrial goggles. Eastern Equipment Co., Willow Grove, Pa.
SPECIAL WELDER—Leather welding gloves. E. J. Streichert, Chicago, Ill.
SPECIAL—Carbon tool steel. Firth-Sterling Steel & Carbide Co., McKeesport, Pa.
SPECIAL TITE-KOTE—Coated manganese nickel steel electrodes. Stulz-Sickels Co., Newark, N. J.
SPED CABLE—Welding cable connector. Yerco Distributors, Los Angeles, Calif.
SPEED DEVIL—Iron-powder electrode. The Champion Rivet Co., Cleveland, Ohio.
SPEEDEX—Powder-metal electrode. Metal & Thermit Corp., New York, N. Y.
SPEED KING—Cutting torch. Harris Calorific Co., Cleveland, Ohio.
SPEED PRESS—Hydraulic arbor press. Studebaker Machine Co., Maywood, Ill.
SPEED ROD No. 44—Mild steel electrode. Champion Rivet Co., Cleveland, Ohio.
SPEED VISE—Drill press vises and machinists' vise. Cardinal Machine Co., Glendale, Calif.
SPEEDARC—Electric arc welding machines. Ideal Electric & Manufacturing Co., Mansfield, Ohio.
SPEEDEX—Metal & Thermit Corp., N. Y., N. Y.
SPEE-D-COUPLER—Hydraulic coupler. Blackhawk Mfg. Co., Milwaukee, Wis.
SPEEDMATIC—Portable electric saws and sanders. The Porter-Cable Machine Co., Syracuse, N. Y.
SPEEDOMATIC—Automatic arc welding wire. Steel Sales Corp., Chicago, Ill.
SPEEDOX DOE—Carbon steel wire. Central Steel & Wire Co., Chicago, Ill.
SPEEDVISE—Hydraulic bench vises w/foot operator. Studebaker Machine Co., Maywood, Ill.
SPEEDWAY—Electric hoists. Wright Hoist Div. of American Chain & Cable Co., Inc., York, Pa.
SPEEDWAY—Portable electric drills and electric bench grinders. Speedway Mfg. Co., Cicero, Ill.
SPEED-WET—Waterproof coated abrasive. Behr-Manning Corp., Troy, N. Y.
SPEEDWITCH—Flexible shaft grinder. Charles L. Jarvis Co., Middletown, Conn.
SPEEDWITCH—Coated electrode. Eastern Equipment Corp., Willow Grove, Pa.
SPEEDY—Helmet attachment for clipping helmet to safety cap. The Fibre-Metal Products Co., Chester, Pa.
SPEEDY ATTACHMENT — Helmet attachment. Safety Div. of Davis Emergency Equip. Co., Newark, N. J.
SPEER—Carbon arc welding rods, welding plates and welding paste; welding generator and motor brushes. Speer Carbon Co., St. Marys, Pa.
SPERRY—Resistance type flash butt welder. Sperry Products, Inc., Danbury, Conn.
SPIRABAND—Coated abrasive. Behr-Manning Corp., Troy, N. Y.
SPIRABELT—Coated abrasive. Behr-Manning Corp., Troy, N. Y.

SPIRATUBE—Cloth covered flexible tubing. Warner Bros. Co., Bridgeport, Conn.
SPITFIRE—Rosin disc. Abrasive Products, Inc., South Braintree, Mass.
SPLICIT—Automatic line splice for joining lines or cables. Burndy Engineering Co., New York, N. Y.
SPOTCHECK—Dye penetrant inspection material. Magnaflux Corp., Chicago, Ill.
SPOTLESS—Coated cover lens. Universal Power Corp., Cleveland, Ohio.
SPRAY MIX—Coating refractory. Mexico Refractory Co., Mexico, Mo.
SPRAYWELDER—A powder metallizing unit. Wall Colmonoy Corp., Detroit, Mich.
SPREADARC — Automatic welding attachment. The Lincoln Electric Co., Cleveland, Ohio.
SPRINGTITE—Electrode holder. McClary & Byers Equipment Co., Oakland, Calif.
SQUARE CAST—For oxy-acetylene welding cast iron. Hobart Bros. Co., Troy, Ohio.
SQUARE D—Resistance welder control. Square D Co., Industrial Controller Div., Milwaukee, Wis.
SQUEEZE-GRIP—Carbon dioxide portable fire extinguishers (discharge valve). C-O-Two Fire Equipment Co., Newark, N. J.
STA-SET—Finger guards. American Optical Co., Southbridge, Mass.
STA-WARM—Metal melting pot and kettles. Sta-Warm Electrical Co., Ravenna, Ohio.
STABLE-ARC—Mild steel electrodes. Lincoln Electric Co., Cleveland, Ohio.
STACKPOLE—Arc welding and brazing carbons, welding tips, generator brushes, welding paste, etc. Stackpole Carbon Co., St. Marys, Pa.
STAC-VENT—Goggles. Watchmaker Optical Co., Inc., Providence, Rhode Island.
STAIDARC—Modified coated electrode. Universal Welding Co., Cleveland, Ohio.
STAIN-CRAFT—Electrodes for welding chrome and nickel stainless steel and chromium-iron. Allied Weld-Craft, Inc., Indianapolis, Ind.
STAIN-ROD—Stainless steel electrodes. Marquette Manufacturing Co., Inc., Minneapolis, Minn.
STAINARC—Stainless steel welding rods and electrodes. Universal Power Corp., Cleveland, Ohio.
STAINITE—Tin cleaner. Turco Products, Inc., Los Angeles, Calif.
STAINKOTE — Stainless steel electrodes. Central Steel and Wire Co., Chicago, Ill.
STAINLEND—Stainless steel electrodes for AC-DC welding. Arcos Corp. Philadelphia, Pa.
STAINLESS STEEL "48"—Liquid soldering flux. Remont Mfg. Co., Lombard, Ill.
No. 6 STAINLESS—Steel soldering flux. Farralloy Co., Philadelphia, Pa.
ST. PIERRE—Combination hammer, chisel and brush for use in cleaning welds. St. Pierre Chain Corp., Worcester, Mass.
STAINALOY—Resistance welding electrodes. Acme Electric Welder Co., Los Angeles, Calif.
STAINOX—Treated, bare rod. Central Steel and Wire Co., Chicago, Ill.
STAINWELD—Stainless steel electrodes. Lincoln Electric Co., Cleveland, Ohio.
STANDARD—Screw geared hoist. Chisholm-Moore Hoist Corp., Tonawanda, N. Y.
STANDARD—Water hardening tool steel. Henry Disston & Sons, Inc., Philadelphia, Pa.
STANDARD—Power hack saws. Peerless Machine Co., Racine, Wis.
STANDARD—Welding positioner. Standard Machinery Co., Providence, R. I.
STANDARD—Welding rods and electrodes. Standard Steel and Wire Co., Bolivar, Pa.
STANDARD—Electric welded carbon and stainless steel tubing. The Standard Tube Co., Detroit, Mich.
STANDARD—Soldering handpiece. Wassco Electric Products Corp., Joliet, Ill.
STANDARD PATTERN—Bench and floor grinders. Clizbe Bros., Mfg. Co., Plymouth, Ind.
STANLEY — Portable electric grinders, sanders, bench grinders, drills and motor driven shears. Stanley Electric Tool Div., The Stanley Works, New Britain, Conn.
STANWELD—Tubing. The Standard Tube Co., Detroit, Mich.
STAR—Hack saw blades and frames, flexible back metal cutting band saws. Clemson Bros., Inc. Middletown, N. Y.
STAR—Plow points. Star Manufacturing Co., Division of Illinois Iron & Bolt Co., Carpentersville, Ill.
STAR—Wire wheel brush sections. Anderson Corp., Worcester, Mass.
STAR J—Metal-cutting tools. Haynes Stellite Co., New York, N. Y.
STAR-JET—Oxyacetylene torch. Marquette Mfg. Co., Inc., Minneapolis, Minn.
STAR WELDER—Spot and butt welders. Ames Spot Welder Co., Inc., Brooklyn, N. Y.
STAR-MO—High-speed steel bits. Firth-Sterling Steel & Carbide Corp., Pittsburgh, Pa.
STARRETT—Hack saw and hand saw blades and steel tapes. L. S. Starrett Co., Athol, Mass.
STASAFE—Protective clothing, face shields. Standard Safety Equipment Co., Chicago, Ill.
STASAFE HAIRGARD—Cap fitted with a transparent acetate visor. Standard Safety Equipment Co., Chicago, Ill.
STATIFLUX—Electrostatic inspection equipment. Magnaflux Corp., Chicago, Ill.
STATOSEC—Shape cutting machine. The Burdett Oxygen Co., Cleveland, Ohio.
STAY-PUT—Clamps, hose. J. N. Fauver Co., Inc., Detroit, Mich.
STEAM-AERO—Steam cleaning compound. Turco Products, Inc., Los Angeles, Calif.
STEAM-OFF—Steam cleaning compound. Turco Products, Inc., Los Angeles, Calif.
STEAMEZE—Steam cleaning compound. Turco Products, Inc., Los Angeles, Calif.
STEAMFAS—Steam cleaning compound. Turco Products, Inc., Los Angeles, Calif.
STEEL CITY—Portable hardness tester. Steel City Testing Laboratory, Detroit, Mich.
STEEL GRIP—Protective clothing; gloves; mittens, aprons, spats and leggings made with steel reinforcing. Industrial Gloves Co., Danville, Ill.
STEEL HANDLER—All leather gloves. Advance Glove Co., Detroit, Mich.
STEEL-CLAD—Rotary wire wheel brush. The Milwaukee Brush Mfg. Co., Milwaukee, Wis.
STEEL-CLAD—Pneumatic grinders and wire brush machines. Chicago Pneumatic Tool Co., New York, N. Y.
STEELGARD—Rust preventative. Haas Miller Corp., Philadelphia, Pa.
STEELKOTE—Coated electrodes. Central Steel and Wire Co., Chicago, Ill.
STEELKOTE 6—Low carbon, full fluxed electrode. Central Steel & Wire Co., Chicago, Ill.
STEELKOTE 110—Flux coated high carbon electrode. Central Steel and Wire Co., Chicago, Ill.
STEELRITE—Crayon for marking steel. Whittaker, Clark & Daniels, Inc., New York, N. Y.
STEEL-TECTIC—Mild steel electrode. Eutectic Welding Alloys Corp., Flushing, N. Y.
STEELWELD—Shears & presses. The Cleveland Crane & Engineering Co., Wickliffe, Ohio
STEFFAN—Natl. Welding Equip. Co., San Francisco, Cal.
STEINER — Drying ovens for coated electrodes. Steiner-Ives Co., Newark, N. J.
STELCO—Welding tips. Dockson Corp., Detroit, Mich.
STERILSHIELD—Fume collector. The Baker Co., Inc., Maplewood, Mo.
STERLING—Dredge chain. The Cleveland Chain & Mfg. Co., Cleveland, Ohio.
STERLING—Flints for torch lighters. Flint Products Co., Brooklyn, N. Y.
STERLING—Rock salt and salt tablet dispensers. International Salt Co., Inc., Scranton, Pa.
STERLING—Steel. Firth-Sterling Steel and Carbide Corp., McKeesport, Pa.
STERLING—Spot, seam, butt, gun and arc welders. Sterling Utilities Co., Inc., Brooklyn, N. Y.
STERLING STAINLESS—Straight-chromium stainless steels. Firth-Sterling Steel and Carbide Corp., McKeesport, Pa.
STERLING STAINLESS "A"—Steel-stainless. Firth-Sterling Steel and Carbide Corp., McKeesport, Pa.
STERLING STAINLESS "B"—Steel-stainless. Firth-Sterling Steel and Carbide Corp., McKeesport, Pa.
STERLING TOOL—Water-hardening carbon steel. Firth-Sterling Steel and Carbon Co., McKeesport, Pa.
STERBON—Grinding wheel. Sterling Grinding Wheel Div., The Cleveland Quarries Co., Tiffin, Ohio.
STERLITH—Grinding wheel. Sterling Grinding Wheel Div., The Cleveland Quarries Co., Tiffin, Ohio.
STILLSON—Pipe wrench. Walworth Co., New York, N. Y.
STOODITE—Hard-facing rods and electrodes. Stoody Co., Whittier, Calif.
STOODY 1 & 6—Hard-facing rods and electrodes. Stoody Co., Whittier, Calif.
STOODY 101, 102, 103, 105, 106, 107, 121, 122, 130—Hard-facing wire. Stoody Co., Whittier, Calif.
STOODY 1027—Hard-facing electrodes. Stoody Co., Whittier, Calif.
STOODY HIGH CARBON—Welding electrodes and wire. Stoody Co., Whittier, Calif.
STOODY MANGANESE—Nickel-manganese welding electrode and welding wire. Stoody Co., Whittier, Calif.
STOODY SELF-HARDENING-21—Hard-facing electrodes. Stoody Co., Whittier, Calif.
STOODY—Hard-facing metals welding rods, grinders and other equipment. Stoody Co., Whittier, Calif.
STOODY SELF-HARDENING—Hard-facing rods and electrodes. Stoody Co., Whittier, Calif.
STOP-FIRE—Fire extinguishers. Stop-Fire, Inc., Brooklyn, N. Y.
STOW—Flexible shaft machines; flexible shaft power drives and flexible shaft remote controls for valves, etc. Stow Manufacturing Co., Binghamton, N. Y.
STRAIGHT HOLDERS—Holders. S-M-S Corp., Detroit, Mich.
STRAITFLO—Line strainer. Hays Mfg. Co., Erie, Pa.
STRAND—Flexible shaft machines. N. A. Strand Div., Franklin Balmar Corp., Baltimore, Md.
STRAND FLEX—Flexible shaft machines. N. A. Strand Div., Franklin Balmar Corp., Baltimore, Md.
STRAUSS—Safety equipment. Strauss Co., Pittsburgh, Pa.
STREAMLINE—Steel tape rule. Master Rule Mfg. Co., Middletown, N. Y.
STREAMLINE—Bronze fitting and copper pipe. Mueller Brass Co., Port Huron, Mich.
STREAMLINE—Electrode holders. Wagner Manufacturing Co., Inc., Jackson, Mo.
STREAMLINE JUNIOR—200 amp. gas engine driven arc welder. Hobart Bros. Co., Troy, Ohio.
STREAMLINER—Helmets and handshields. Metro Mfg. Co., Long Island City, N. Y.
STEAM-POWER—Portable air tools. Buckeye Tools Corp., Dayton, Ohio.
STREICHERT—Gloves. E. J. Streichert, Chicago, Ill.
STRIKEASY — Iron-powder electrode. General Electric Co., Schenectady, N. Y.
STRIPTEX—Paint, lacquer and enamel stripper. Diversey Corp., Chicago, Ill.
STROCO—Crater eliminator. Flux-plated welding electrodes. Carl Strobel Corp., Los Angeles, Calif.
STRONGCAST—Steel electrode. Hobart Brothers Co., Troy, Ohio.
STRYCO—Resistance welders, cranes and hoists, trolleys, tracks and craneways and resistance welding transformers. Stryco Mfg. Co., San Francisco, Calif.
STURDI-BILT—Wire cup power brushes. The Milwaukee Brush Mfg. Co., Milwaukee, Wis.
STURDY-WEAVE—Asbestos clothing, gloves, leggings, aprons, etc. The Safety Equipment Service Co., Cleveland, Ohio.
STYLE 10—Black oxy-acetylene hose. Republic Rubber Div., Lee Rubber & Tire Corp., Youngstown, Ohio.
STYLE 20—Red oxy-acetylene hose. Republic Rubber Div., Lee Rubber & Tire Corp., Youngstown, Ohio.
STYL-IZE—Safety spectacles. United States Safety Service Co., Kansas City, Mo.
SUL-COATED—Mild steel electrode. The Champion Rivet Co., Cleveland, Ohio.
SULFLO—Cutting oils and solder fluxes. Sulflo, Inc., Elizabeth, N. J.
SULKOTE—Electrode. Hobart Brothers Co., Troy, Ohio.
SUN-RAY—Acetylene. Atlas Acetylene Co., Kearney, N. J.
SUNBEAM STEWART—Industrial heat treating furnaces, galvanizing, stress relieving and pot furnaces. Sunbeam Stewart Ind. Furnace Div. of Sunbeam Corp., Chicago, Ill.
SUNSTRAND—Wire rope and strand. Sunbury Wire Rope Mfg. Co., Sunbury, Pa.
SUPER—Drill grinding attachment. A. D. McBurney, Los Angeles, Calif.
SUPER—Welding torches. Modern Engineering Co., Inc., St. Louis, Mo.
SUPERAIRCO—Oxygen & Acetylene generators and manifolds. Superior Air Products Co., Newark, N. J.
SUPER ALLOY—Hard-facing alloy. Resisto-Loy Co., Grand Rapids, Mich.
SUPER ARMOR PLATE—Hardened lenses. American Optical Co., Southbridge, Mass.
SUPER DYNAMITE—Hose. Mulconroy Co., Philadelphia, Pa.
SUPER G—Paste type solders. Fusion Engineering, Cleveland, Ohio.
SUPER HI-MO—Steel. Firth-Sterling Steel and Carbide Corp., McKeesport, Pa.
SUPER MICRO-TOXISOL—Respirator. American Optical Co., Southbridge, Mass.
SUPER NICKEL-CLAD STEEL—Clad steel nickel bonded to a base plate of steel. Lukens Steel Co., Coatesville, Pa.
SUPER-SAFETY—Lenses for grinding and chipping goggles. Chicago Eye Shield Co., Chicago, Ill.
SUPER SERVICE—Welding power cables. General Cable Corp., New York, N. Y.
SUPER STAR-MO—Steel of tungsten-moly. Firth-Sterling Steel & Carbide Co., McKeesport, Pa.
SUPER SIGHT—Light magnifiers. The Boyer Campbell Co., Detroit, Mich.
SUPER SPEED—Tools. Tri-Clover Machine Co., Kenosha, Wis.
SUPER T—Paste type solders. Fusion Engineering, Cleveland, Ohio.
SUPER VISIBILITY—Protective glass for electric welding. Lincoln Electric Co., Cleveland, Ohio.
SUPER-CLAMPS—Clamps. The Cincinnati Tool Co., Cincinnati, Ohio
SUPERCYCLE—Weld cleaning tools. Chicago Pneumatic Tool Co., New York, N. Y.
SUPER-DIFOLD—Buffs. Divine Brothers Co., Utica, N. Y.
SUPER-DREDNAUT—Goggles and lenses. Safety Equipment Service Co., Cleveland, Ohio
SUPER-G—Paste type solders. Fusion Engineering, Cleveland, Ohio
SUPER-EBONITE—Hose. Quaker Rubber Co., Philadelphia, Pa.
SUPERETTE—Electrode holders. Wagner Manufacturing Co., Inc., Jackson, Mo.
SUPEREX—Capacitors. Solar Manufacturing Corp., North Bergen, N. J.
SUPERECTOR—Heavy duty ratchet wrenches. J. H. Williams & Co., Buffalo, N. Y.
SUPERFLEX—Kickless dual-conductor welding cables. Uniflex Cable Co., Detroit, Mich.
SUPERIOR—Testing machines. Steel City Testing Machines, Inc., Detroit, Mich.
SUPERIOR—Welding and cutting torches accessories, supplies, acetylene generators, etc. Superior Oxy-Acetylene Machine Co., Hamilton, Ohio.
SUPERIOR—Chain hoists. David Round & Son, Cleveland, Ohio.
SUPERIOR—Arc welding hand shield. Welding Engineering Co., Milwaukee, Wis.
SUPERIOR—Cylinder valves. Superior Valve & Fittings Co., Pittsburgh, Pa.
SUPERIOR—Welding, soldering and brazing fluxes. Superior Flux Co., Cleveland, Ohio.

SUPERIOR—Compressed gases. Superior Industrial Gas Corp., Astoria, N. Y.
SUPER-JET—Heavy duty oxyacetylene torch. Marquette Mfg. Co., Inc., Minneapolis, Minn.
SUPERJUSTABLE—Adjustable wrenches. J. H. Williams & Co., Buffalo, N. Y.
SUPERMEL—Insulation for electrode holders. Tweco Products Co., Wichita, Kans.
SUPERPHONE—Loudspeaker diving telephone for underwater cutting and welding. Craftsweld Equipment Corp., Long Island City, N. Y.
SUPERRENCH—Wrenches. J. H. Williams & Co., Buffalo, N. Y.
SUPERSOCKET—Detachable socket wrenches. J. H. Williams & Co., Buffalo, N. Y.
SUPER-SOLDER—Solder. Fusion Engineering Co., Cleveland, Ohio
SUPER-TOUGH—Heat-treated goggle lenses. Willson Products, Inc., Reading, Pa.
SUPERTROL—Metal cleaner. Turco Products, Inc., Los Angeles, Calif.
SUPER-VENT—Chemical dust masks. American Optical Co., Southbridge, Mass.
SUPERWELD NO. 55, NO. 66, NO. 77, AND NO. 88—Coated arc electrodes. Steel Sales Corp., Chicago, Ill.
SUPERWELD NO. 77A—Coated electrodes. Steel Sales Corp., Chicago, Ill.
SUPER-X—Welding & cutting torches. Modern Engineering Co., Inc., St. Louis, Mo.
SUPRALOY—Hard facing electrodes. Industrial Overlay Metals Inc., Eaton, Ohio.
SUPREME—All-purpose Neoprene belting. Victor Balata & Textile Belting Co., New York, N. Y.
SUREGRIP—Electrode holders. Martin Wells, Los Angeles, Calif.
SUREWELD—Electrodes, arc welders, spot welders. National Cylinder Gas Co., Chicago, Ill.
SUREWELD 24 AND 27—Iron Powder electrodes. National Cylinder Gas Co., Chicago, Ill.
SURFACE—All types of heat treat furnaces. Surface Combustion Co., Toledo, Ohio.
SURFACEWELD—Hardsurfacing powder. Lincoln Electric Co., Cleveland, Ohio.
SURFALLOY—Welding alloys. Eutectic Welding Alloys Corp., Flushing, N. Y.
SUVENEER—Copper, nickel, monel and stainless clad steel. Superior Steel Corp., Carnegie, Pa.
SVEA—Swedish iron welding wire. Swedish Iron and Steel Corp., New York, N. Y.
SWEAT-ON—Fluxes or alloys for joining materials. Eutectic Welding Alloys Co., Flushing, N. Y.
SWEDG-ON—Lugs and screws. Wagner Manufacturing Co., Inc., Jackson, Mo.
SWEAT-ON-PASTE—Hard facing paste. Wall Colmonoy Corp., Detroit, Mich.
SWEDOX—Welding rods, electrodes and supplies. Made by Central Steel & Wire Co., Chicago, Ill
SWETITE—Paste solder. Alpha Metals, Inc., Jersey City, N. J.
SWIFT—Resistance welding equipment. Swift Electric Welder Co., Detroit, Mich.
SWIFT-O-MATIC—Air-hydraulic flash welder. Swift Electric Welder Co., Detroit, Mich.
SWIFTWELD—Mild steel electrode. Lincoln Electric Co., Cleveland, Ohio.
SWIRT—Emulsion cleaning solvent. Phillips Manufacturing Co., Chicago, Ill.
SWISS—Solders, solder paddles and fluxes, tinning compound, wire wheels and brushes. Swiss Laboratory, Cleveland, Ohio.
SYNCHRO-MATIC—Flash welder. Thomson Electric Welder Co., Lynn, Mass.
SYNCRO-BREAK—Magnetic welder contactor. Square D Co., Industrial Controller Div., Milwaukee, Wis.
SYNCRO-TIMER—Precision timer. National Time & Signal Corp., Detroit, Mich.
SYNTHITE—Insulating Varnish. John C. Dolph Co., Newark, N. J.
SYNTRON—Chipping and scaling hammers, electric grinders, portable electric drills, portable gas-electric power plants. Syntron Co., Homer City, Pa.
SYRALL—Clamps, tool handles, ladles, pots and kettles, circular and hole saws, cylinder trucks. Syracuse Alloy Metals, Syracuse, N. Y.
SYTE-AYDE—Illumination kit. General Scientific Equipment Co., Philadelphia, Pa.

T

TD—Coated electrode. Hollup Corp., Division of National Cylinder Gas Co., Chicago, Ill.
T-1—Constructional alloy steel. U. S. Steel Corp., Pittsburgh, Pa.
T-J CO.—Preheating annealing and stress relieving furnaces. Tate, Jones & Co., Leetsdale, Pa.
TW—Seamless gas cylinders. Taylor-Wharton Iron and Steel Co., Easton, Pa.
TAG—Air pressure and resistance welding regulators. Weston Elec. Instrument Co., Newark, N. J.
TAKE-ABOUT—Portable electric hand sander. Porter-Cable Machine Co., Syracuse, N. Y.
TAM—Alloys, refractories and cement. Titanium Alloy Manufacturing Co., Niagara Falls, N. Y.
TANARC—Electrode coating mineral. Foote Mineral Co., Philadelphia, Pa.
TANDEM—Timer control unit. Industrial Timer Corporation, Newark, N. J.
TAN DEVIL—Mild steel electrode. Champion Rivet Co., Cleveland, Ohio.
TANK-WELL—Wrenches for acetylene tanks. Chicago Hardware Foundry Co., The, North Chicago, Ill.
TANTUNG—Alloy. Also welding rod and cutting tool taps. Fansteel Metallurgical Corp., North Chicago, Ill.
TANTUNG—Cast alloy tools, blanks and precision castings. Vascoloy-Ramet Corp., Waukegan, Ill.
TAPER-LOK—Cable connector. Erico Products, Inc., Cleveland, Ohio.
TAPGUN—Portable tapgun. Black & Decker Mfg. Co., The, Towson, Md.
TAYLOR—Spiral and straight-seam welded pipes, forged fittings. Taylor Forge and Pipe Works, Chicago, Ill.
TAYLOR-FORGE—Electric, fusion welded pipe, forged pipe fittings, pipe flanges for welding, welding necks and flanges for tanks and other forged products. Taylor Forge and Pipe Works, Chicago, Ill.
TAYLOR-HALL—Spot welders. The Federal Machine Welder Co., Warren, Ohio.
TAYLOR-MADE—Chain. S. G. Taylor Chain Co., Hammond, Ind.
TAYLOR-WINFIELD—Resistance spot, projection, seam and flash-butt welding machines. The Taylor-Winfield Corp., Warren, Ohio.
TECO—Under water arc-oxygen torch and under water gas torch. The Thompson Engineering Co., Grand Rapids, Mich.
TEMCO—Electric furnaces. Thermo Electric Manufacturing Co., Dubuque, Iowa.
TEMDCO—Hard surfacing electrodes. The MacDonald Co., Inc., Reno, Nev.
TEMDCOMANG—Nickel manganese electrode. The MacDonald Co., Inc., Reno, Nev.
TEMDCOPASTE—Hardsurfacing paste. The MacDonald Co., Inc., Reno, Nev.
TEMP-ALARM—Temperature indicating paint. Tempil Corp., New York, N. Y.
TEMPIL PELLETS—Temperature-indicating pellets. Tempil Corp., New York, N. Y.
TEMPILAQ—Temperature indicating paint. Tempil Corp., New York, N. Y.
TEMPILSTIKS—Temperature indicating crayon. Tempil Corp., New York, N. Y.
TEMPRITE—Refrigeration products. Temprite Products Corp., Detroit, Mich.
TENSILEND—Electrodes for welding high carbon, low alloy, high tensile and free machining steels. Arcos Corp., Philadelphia, Pa.
TENS-O-MATIC—Automatic welding wire. Allied Weld-Craft, Inc., Indianapolis, Ind.
TENSOX—Carbon steel. Central Steel & Wire Co., Chicago, Ill.
TEX-DRIVE—Grinders and buffers. The Hisey Wolfe Machine Co., Cincinnati, Ohio.
THEMAC—Portable electric grinders. The McGonegal Mfg. Co., E. Rutherford, N. J.
THERMACOTE—Spatter-proof cover lenses. Thermacote Co., Los Angeles, Calif.
THERMO—Tip cleaners, aligning clamps, torch liter and plastic cover lens. Thermacote Co., Inc., Los Angeles, Calif.
THERMO-GRIP—Electric soldering tools. Ideal Industries Inc., Sycamore, Ill.
THERMO-LO BLUE—Welding cast iron flux. Farrelloy Co., Philadelphia, Pa.
THERMO-LO PINK—Brazing cast iron, steel, bronze steel flux. Farrelloy Co., Philadelphia, Pa.
THER-MONIC—Induction, dielectric and corebaking equipment. Induction Heating Corp., Brooklyn, N. Y.
THERMOTRODE—Heating electrodes. Eutectic Welding Alloys Corp., Flushing, N. Y.
THE WELDER—Leather welding gloves. E. J. Streichert, Chicago, Ill.
THOMAS—Metal disintegrator and electrodes. Clinton Machine Co., Warner Div., Detroit, Mich.
THOM McAN—Safety shoes. Thom McAn Safety Shoe Div. of Melville Shoe Corp., New York, N. Y.
THOMPSON—Torch unit for underwater arc cutting. Thompson Engineering Co., Grand Rapids, Mich.
THOMSON OBI—Welding presses. Thomson Electric Welder Co., Lynn, Mass.
THOMSON—Spot butt seam, flash, multimatic spot, fabric welders, and other types of resistance welding machines. Thomson Electric Welder Co., Lynn, Mass.
THOR—Portable electric and pneumatic tools. Thor Power Tool Co., Aurora, Ill.
THOR—Portable electric and pneumatic tools. Independent Pneumatic Tool Co., Chicago, Ill.
THREADWELL—Twist drills. The Threadwell Tap & Die Co., Greenfield, Mass.
THREDOLETS—Forged pipe welding fittings. Bonney Forge and Tool Works, Allentown, Pa.
3M—Coated abrasives, abrasives and coatings. Minnesota Mining & Mfg. Co., St. Paul, Minn.
THREE-M-ITE—Abrasive cloth. Minnesota Mining and Mfg. Co., St. Paul, Minn.
THREE-PHASE—Welding equipment. Sciaky Bros., Inc., Chicago, Ill.
THYRATRON—Control for spot- and line-welding equipment. General Electric Co., Schenectady, N. Y.
TIGER—Welding and brazing flux. Columbia Chemical Products Co., Detroit, Mich.
TIGER BRAND—Wire rope. Tennessee Cable, Iron and Railroad Co., Birmingham, Ala.
TIGERWELD—Wire rope. American Steel and Wire Co., Rockefeller Bldg., Cleveland, Ohio.
TILLMAN—Leather gloves, mittens, garments, and supplies. John Tillman and Co., Long Beach, Calif.
TINEZY—Tinning compounds. Farreloy Co., Philadelphia, Pa.
TIN-EZY—Soldering compound and galvanizing compound. Johnson Mfg. Co., Inc., Mount Vernon, Iowa.
TINEZY BRAND Z—Tinning compound. Farrelloy Co., Philadelphia, Pa.
TINEZY REGULAR—Flux. Farrelloy Co., Philadelphia, Pa.
TINKOTE—Tinning compound. Tinkote Co., Revere, Mass.
TINNENE COMPOUND—Soldering flux (powder). Remont Mfg. Co., Lombard, Ill.
TINOL—Solder in paste form. American Solder and Flux Co., Philadelphia, Pa.
TINS-TYTER—Soldering flux. Remont Mfg. Co., Lombard, Ill.
TINWELD—Solder—paste flux combination. Eutectic Welding Alloys Corp., Flushing, N. Y.
TIP CLEEN—Tip cleaning compound. Wolte-Kote Co., Sheboygan, Wis.
TIPALOY—Resistance welding electrodes. Tipaloy, Inc., Detroit, Mich.
"TIPIT"—Chain sling. Manning, Maxwell & Moore Inc., Shaw-Box Crane & Hoist Div., Muskegon, Mich.
TIP-O-LITER—Combination tip cleaner set and torch liter. Thermacote Co., Los Angeles, Calif.
TIPPY—Resistance welding electrodes. Tipaloy, Inc. Detroit, Mich.
TIREX—Welding and power cables. Simplex Wire & Cable Co., Cambridge, Mass.
TISCO—Manganese weld rod. Taylor-Wharton Iron & Steel Co., Cincinnati, Ohio
TITAN—Electric hoist. Detroit Hoist & Machine Co., Detroit, Mich.
TITAN—Deoxidized bronze alloy welding rods and other products. Titan Metal Manufacturing Co., Bellefonte, Pa.
TITANALBA—Titanium dioxide. Foote Mineral Co., Philadelphia, Pa.
TITAN BRONZE—Deoxidized bronze welding rods. Titan Metal Mfg. Co., Bellefonte, Pa.
TITAN MANGANESE BRONZE—Bronze rod. Titan Metal Mfg. Co., Bellefonte, Pa.
TITAN WEARWELL—Rods of bronze. Titan Metal Mfg. Co., Bellefonte, Pa.
TITANOX—Electrode coating material. National Lead Co., New York, N. Y.
TITANOX—Titanium dioxide. Titanium Pigment Corp., New York, N. Y.
TITE-KOTE—Nickel manganese steel electrodes. Stulz-Sickles Co., Newark, N. J.
TNEL—A.C. arc welding machines and spot welders. Tnel Manufacturing Co., Hornell, N. Y.
TOBIN BRONZE—Copper, zinc, tin alloy. The American Brass Co., Waterbury, Conn.
TOCCO—Induction heating equipment. The Ohio Crankshaft Co., Tocco Div., Cleveland, Ohio.
TOLMAN—Welding and cutting torches, regulators, accessories and supplies, oxy-acetylene welding and cutting outfits, electrode holders. Tolman Mfg. Co., Boston, Mass.
TOMAHAWK—Weld chipping hammer. Atlas Welding Accessories Co., Ferndale, Mich.
TOMBAC—Flux for brazing alloy steels and copper. Morey Flux and Chemical Co., Wilmington, Del.
TONCAN IRON—Iron alloy. Republic Steel Corp., Cleveland, Ohio.
TONG TEST—Clamp on type ammeter (AC & DC). Columbia Electric Mfg. Co., Cleveland, Ohio.
TOOL ARC—Coated electrodes for tools. Universal Welder Corp., Cleveland, Ohio.
TOOL-ARC—Tool and die electrodes. Alloy Rods Co., York, Pa.
TOOL-CRAFT—Tool steel welding electrodes. Allied Weld-Craft, Inc., Indianapolis, Ind.
TOOL-N-DIE—Coated elec. for welding oil hardening, water hardening, air, hot work and high speed steels. Hobart Bros. Co., Troy, Ohio.
TOOLFACE—Welding rods and electrodes. American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
TOOLFACER—Alloy tool steel welding electrode. Hobart Brothers Co., Troy, Ohio.
TOOLWELD—Hardsurfacing electrode. The Lincoln Electric Co., Cleveland, Ohio.
TOPPER—Steel tape rule. Master Rule Mfg. Co., Middletown, N. Y.
TORCH KINK—Weldors gloves. Advance Glove Co., Detroit, Mich.
TORCHETTE—Burner igniter. Eclipse Fuel Engineering Co., Rockford, Ill.
TORCHO-MATIC—On-off air-acetylene gas gun. Velocity Power Tool Co., Pittsburgh, Pa.
TORCHWELD—Oxy-Acetylene welding and cutting equipment. Torchweld Equipment Division, National Cylinder Gas Co., Chicago, Ill.
TORCO—Vises. Wilton Tool Mfg. Co., Chicago, Ill.
TORENT—Power spray washer. Phillips Manufacturing Co., Chicago, Ill.
TORIT—Dust collectors and exhausters. Torit Manufacturing Co., St. Paul, Minn.
TORKFLASH—Tension wrench. Blackhawk Mfg. Co., Milwaukee, Wis.
TOR-KON-VERTOR—Flame cutter. Superior Welding and Machine Co., Bartlesville, Okla.
TOTALUME—Rust preventive aluminum paint. The Wilbur & Williams Co., Boston, Mass.
TOTRUST—Rust preventive paint. The Wilbur & Williams Co., Boston, Mass.
TOUGH DEVIL—Nickel manganese electrode. The Champion Rivet Co., Cleveland, Ohio
TOURNAROPE—Wire rope. R. G. LeTourneau, Inc., Peoria, Ill.
TRACTOR-STRIP—Spatter preventive. Marquette Mfg. Co., Inc., Minneapolis, Minn.

TRACTRED—Turning rolls. Aronson Machine Co., Arcade, N. Y.
TRAKALOY—Hard-facing impact electrodes. Bergstrom Alloys Corp., Reno, Nev.
TRAKALOY—Hard facing rods. Industrial Overlay Metals, Inc., Eaton, Ohio
TRAMBEAM—Overhead trolley systems. Whiting Corp., Harvey, Ill.
TRANS-ARC—Transformer-type arc welder. American Transformer Co., Newark, N. J.
TRANSITE—Asbestos-cement pipe. Johns-Manville, New York, N. Y.
TRANSPO—Metal and parts cleaner. Turco Products, Inc., Los Angeles, Calif.
TRANSWALL—Sound barrier curtain. Bemis Bro. Bag Corp., Minneapolis, Minn.
TRAVEL-CUT—Wire straightening and cutting machine. The Lewis Machine Co., Cleveland, Ohio.
TRAY-LIFT—Electric crane. Harnischfeger Corp., Milwaukee, Wis.
TRAVOGRAPH—Oxy-acetylene cutting machine. Air Reduction Sales Co., New York, N. Y.
TREASURE CHEST—Wrench set. Blackhawk Mfg. Co., Milwaukee, Wis.
TRENTWELD—Stainless steel tubing. Trent Tube Co., Div., Crucible Steel Co., Pittsburgh, East Troy, Wis.
TRIAD—Pipe thread stock and dies. Nye Tool Co., Chicago, Ill.
TRIBLOC—Chain hoists. Ford Chain Block, Div. of Amer. Chain & Cable Co., Inc., York, Pa.
TRICLENED—Metal degreasing solvent. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
"TRI-PHASE"—Resistance welder. The Taylor-Winfield Corp., Warren, Ohio.
TRI-FLUX—Soldering flux. Wolfe-Kote Co., Sheboygan, Wis.
TRI-FLUX NO. 3, 5, 29—Flux. Wolfe-Kote Co., Sheboygan, Wis.
TRI-LINE—Welding hose. Burdett Oxygen Co., Cleveland, Ohio.
TRI-METAL—Carbide tool and solder shims. D. E. Makepeace Co., Attleboro, Mass.
TRIMO—Pipe wrenches, tube cutters and strap wrenches. Trimont Manufacturing Co., Roxbury, Mass.
TRIMOPATTERN—Pipe cutting wheels, etc. Collmer Bros., South Bend, Ind.
TRINDL—AC arc welders, torches, helmets, welding rods and accessories. Trindl Products, Ltd., Chicago, Ill.
TRIO-LITE—Lighters. Burdett Oxygen Co., Cleveland, Ohio.
TRI-PHASE—Resistance welder. Taylor Winfield Corp., Warren, Ohio
TRIPL-FLINT—Torch lighter. Modern Engineering Co., Inc., St. Louis, Mo.
TRIPLE-DUTY LENSES—Spatterproof cover lenses. Thermacote Co., Los Angeles, Calif.
TRIPLE-LOK—Tube fittings. The Parker Appliance Co., Cleveland, Ohio.
TRIPLEX—Pipe threading stock. Nye Tool Co., Chicago, Ill.
TRIPLETT & BARTON—X-Ray and ultrasonic inspection equipment and numbering machines. Triplett & Barton, Inc., Burbank, Calif.
TRIPLE "A"—Safety signs. The Acromark Co., Elizabeth, N. J.
TRIPLOC—Plugs and receptacles. Pyle-National Co., Chicago, Ill.
TRIUMPH—Chains. Bridgeport Chain & Mfg. Co., The, Bridgeport, Conn.
TRODALOY—Electrode material for resistance welding. General Electric Co., patents by Ampco Metal, Inc., Milwaukee, Wis.; Electroloy Co., New York, City; P. R. Mallory Co., Indianapolis, Ind.; Welding Sales and Engineering Co., Detroit, Mich.
TROJAN—Mono rail tractor. Detroit Hoist and Machine Co., Detroit, Mich.
TROXIDE—Dry acid pickling compound. Waverly Petroleum Products Co., Philadelphia, Pa.
TRU-EDGE—Contour shear. Baker Bros., Inc., Toledo, Ohio
TRU-FLUX—Soldering syrup. American Chemical Process Co., Long Island City, N. Y.
TRU-LAY—Preformed wire rope. American Cable Div. of American Chain & Cable Co., Inc., Wilkes-Barre, Pa.
TRUK-A-BOUT—Cylinder truck. C. W. Young Mfg. Corp., Syracuse, N. Y.
TRUMARK—Protractors. Tru-line Corp., Santa Monica, Calif.
TRUMBULL—Switches and industrial control equipment. The Trumbull Electric Manufacturing Co., Plainville, Conn.
TRU-OHM—Ceramic welding nozzles. Tru-Ohm Products—Model Engineering & Mfg., Inc., Huntington, Ind.
TRI-2-RIP—Leather palm welding gloves. Montpelier Glove Co., Montpelier, Ind.
TUBE BORIUM—Hard-facing rods and electrodes. Stoody Co., Whittier, Calif.
TUBE STOODITE—Hard-facing rods. Stoody Co., Whittier, Calif.
TUBE-O-FLUX—Silver brazing alloy kits. American Products Corp., Chicago, Ill.
TUBE-TUNGSITE—Coarse granule carbide rod. American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
TUBE-TURN—Welding fittings and flanges. Tube Turns, Inc., Louisville, Ky.
TUC-AWAY—Spectacle type safety goggles. Watchemoket Optical Co., Inc., Providence, R. I.
TUC-OVER—Safety goggles. Watchemoket Optical Co., Inc., Providence, R. I.
TUF-COTE—Lens coating against pitting. Bausch & Lomb Optical Co., Rochester, N. Y.
TUF-COTE—Welding and grinding lenses. Wallace Optical Co., Inc., Detroit, Mich.
TUFANHARD—Hard-facing electrode. Hobart Brothers Co., Troy, Ohio
TUFBOY—Steel tape rule. Master Rule Mfg. Co., Middletown, N. Y.
TUFFALOY—Resistance welding alloys. Welding Sales & Engineering Co., Detroit, Mich.
TUFFLEX—Arc welding cable. Westinghouse Electric Corp., Pittsburgh, Pa.
TUFFLINE—Welding resistors, junction boxes, cable connectors, welders' inspection lamps and lights, plugs and receptacles, flood lights and spotlights, circuit-breaker panels and streamer lights. C. H. Stevens & Co., Cornwall Bridge, Conn.
TUFF WELDER—Leather welding gloves. E. J. Streichert, Chicago, Il.
TUFWELD—Welding lenses and plates. Sellstrom Mfg. Co., Chicago, Ill.
TUGIT—Ratchet lever hoists. Manning, Maxwell & Moore, Inc., Muskegon, Mich.
TUKON—Hardness testers. Wilson Mechanical Instrument Co., Inc., New York City.
TU-LINE—Welding hose. Quaker Rubber Corp., Philadelphia, Pa.
TUNG-ALLOY—High heat resisting electrode. The Resisto-Loy Co., Grand Rapids, Mich.
TUNGROD—Fine granule carbide rod. American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
TUNGSTIDE—Hardfacing material. The Lockrey Co., Southampton, N. Y.
TUNGWELD—Hardsurfacing electrodes. The Lincoln Electric Co., Cleveland, Ohio.
TURBINAIR—Hoists. Joy Mfg. Co., Pittsburgh, Pa.
TURBO-JET—Metallizing gun. Metallizing Co. of America, Chicago, Ill.
TURCO AGITON—A compound for cleaning metals. Turco Products, Inc., Los Angeles, Calif.
TURCO AIRLION 81— Compound for cleaning metals. Turco Products, Inc., Los Angeles, Calif.
TURCO CONSISTO-WELD—Preparation of aluminum alloys for spot welding. Turco Products, Inc. Los Angeles, Calif.
TURCO VULCO-ETCH—Preparation of aluminum for spot welding. Turco Products, Inc., Los Angeles, Calif.
TURNER—Blow torches, fire pots, soldering irons and bronze. Turner Brass Works, Sycamore, Ill.
TURRETYPE—Welding helmets. Dockson Corp., Detroit, Mich.
TWECO—Electrode holders, cable lugs, ground clamps, ground hooks, wedges and cable connectors. Tweco Products Co., Wichita Kan.
TWECOLITE—Aluminum welding cable. Tweco Products Co., Wichita, Kan.
TWECOLUG—Welding cable lug. Tweco Products Co., Wichita, Kan.
TWECOTONG—Welding electrode holders. Tweco Products Co., Wichita, Kan.
TWEEZER WELD—Automatic and bench spot welders. Tweezer Weld Corp., Newark, N. J.
TWEEZER-WELD—Resistance welding controls & timers, welding tables and resistance welders. Federal Tool Engineering Co., Cedar Grove, N. J.
TWENTIETH CENTURY—A-C welder and carbon torches and electrode holders. Twentieth Century Welder Mfg. Co., Minneapolis, Minn.
25-20 STAINLESS—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TWIN SPEC—Safety glasses. Zylo Ware Corp., Long Island City, N. Y.
TWIN THERMATORCH—Carbon arc torch. Plymouth Equipment & Supply Co., Plymouth, Mich.
TWINWELD—Double hose molded into a single unit. Hewitt Rubber Corp., Buffalo, N. Y.
TWISTITE—"C" clamp with a positive ground cable connection used as a ground clamp. National Clamp Co., Jackson, Mich.
TWO-TONE TH—Alloyed rod. Resisto-Loy Co., Grand Rapids Mich.
TYGO WELD—Organic welding material in rod form. U. S. Stoneware Co., Tallmadge, Akron, Ohio.
TYPE A—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TYPE A, B, C—Hard facing electrodes. Industrial Overlay Metals, Inc., Eaton, Ohio
TYPE AWL—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TYPE CF—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TYPE CT—Tubular steel electrode. Metal & Thermit Corp., New York, N. Y.
TYPE CW—Waterproofed electrode for underwater welding and cutting. Metal & Thermit Corp., New York N. Y.
TYPED DIES—Forging and stamping dies. Die Typing Corp., Detroit Mich.
18-8 MO—Arc welding electrode. Metal & Thermit Corp., New York N. Y.
TYPE F ELECTRODE—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TYPE FHP ELECTRODE—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TYPE HTS—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TYPE M—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TYPE MA—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TYPE N—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TYPE 90—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TYPE 135—DUSTCOAT-ROD—Electrodes. Marquette Mfg. Co., Minneapolis, Minn.
TYPE RC—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TYPE 347—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TYPE 318—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TYPE S—Work-hardening electrodes. Bergstrom Alloys Corp., Reno, Nev.
TYPE U—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
TYPE X—Cleaner for iron & steel. Turco Products, Inc., Los Angeles, Calif.

U

U ALLOY—White metal welding rod. Universial Power Corp., Cleveland, Ohio.
UC—Underwater electrode for cutting. Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
UCC—Welding products. Union Carbide and Carbon Corp., New York, N. Y.
UDD—Tubing. United Wire & Supply Corp., Providence, R. I.
U-LOY—Copper bearing steel sheets. Republic Steel Corp., General Offices, Cleveland, Ohio.
U. S.—Welding, cutting, lead burning and carbon removing equipment, acetylene generators, preheating torches, accessories and supplies. Harris Calorific Co., Cleveland, Ohio.
U. S.—Electric drills, grinders and buffers. The United States Electrical Tool Co., Cincinnati, Ohio.
U. S.—A.C. arc welders and electrode holders. U. S. Electric Welder Corp., Toledo, Ohio
U. S.—Automatic welding torch. Harris Calorific Co., Cleveland, Ohio
U. S. ROYAL—Welding cable. United States Rubber Co., New York, N. Y.
USS—Steel products. United States Steel Corp., Chicago, Ill.
U. S. S. A-R—Abrasion resisting steel. Carnegie-Illinois Steel Corp., Div. of U. S. Steel Corp., Pittsburgh, Pa.
U. S. S. MX—Free-machining bessemer bar stock. Carnegie-Illinois Steel Corp., Div. of U. S. Steel Corp., Pittsburgh, Pa.
U. S. S.—Stainless steel. U. S. Steel Co., Pittsburgh, Pa.
U. S. S. AMERICAN TIGER BRAND—Wire rope slings. Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
U. S. S. CARILLOY—Alloy steel. Carnegie-Illinois Steel Corp., Div. of U. S. Steel Corp., Pittsburgh, Pa.
U. S. S. COR-TEN—High strength steel. Carnegie-Illinois Steel Corp., Div. of U. S. Steel Corp., Pittsburgh, Pa
U. S. S. MAN-TEN—High strength steel. Carnegie Illinois Steel Corp., Div. of U. S. Steel Corp., Pittsburgh, Pa.
U. S. S. SUPERKORE—Alloy steel. Carnegie-Illinois Steel Corp., Div. of U. S. Steel Corp., Pittsburgh, Pa.
U. S. S. VITRENAMEL—Enameling grade steel. Carnegie-Illinois Steel Corp., Div of U. S. Steel Corp., Pittsburgh, Pa.
U. S. S. TENNESSEE—Bars, plates & shapes. Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
U. S. S. TRITEN—High strength steels. U. S. Steel Supply, Chicago, Ill.
UW—Underwater electrode for welding. Pacific Welding Alloys Mfg. Co., Los Angeles, Calif.
ULTRA-FLEX—Hand grinder. Metal Removal Co., Chicago 10, Ill.
ULTRA-GRAPH—Oxyacetylene torch guiding machine. Heath Engineering Co., Fort Collins, Colo.
ULTRA-SPEED—Multiple spot welder. Federal Machine and Welder Co., Warren, Ohio.
UNI-CRIMP—Wire terminal. H. B. Sherman Mfg. Co., Battle Creek, Mich.
UNIFLEX—Welding cables. Uniflex Cable Co., Detroit, Mich.
UNI-GOGGLE—Gas welding, brazing and cutting goggles. Jackson Products, Warren, Mich.
UNION—Calcium carbide. The Linde Air Products Co., a Division of Union Carbide and Carbon Corp., New York, N. Y.
UNION—Calcium carbide. Dominion Oxygen Company Ltd., Toronto, Ont., Canada.
UNIONMELT—Welding equipment for submerged-arc process. Linde Air Products Co., New York, N. Y.
UNIMATIC—Spot welder. Unitek Corp., Pasadena, Calif.
UNIPAR—Thread sealing compound. The Parker Appliance Co., Cleveland, Ohio.
UNI-FLUX—Andco, Inc., Orchard Park, N. Y.
UNI-PULSE—Condenser discharge spot and seam welder. Federal Machine and Welder Co., Warren, Ohio.
UNIQUE—Preheating torches burning either kerosene or gasoline. Unique Manufacturing Co., Chicago Ill.
UNISHEAR—Metal cutting, electric portable shears. Electric Tools Div., The Stanley Works, New Britain, Conn.
UNISTAGE—Air compressor. Schramm, Inc., West Chester, Pa.
UNITAIR—Compressors. Joy Mfg. Co., Pittsburgh, Pa.

UNITED—Portable fume exhausters. United Blower Co., Inc., New York N. Y.
UNITED STATES GUAGE—Oxy-acetylene gauge. United States Gauge Div., American Machine and Metals, Inc., Sellersville, Pa.
UNITED-WIRE—Seamless tubing and drawn wire. United Wire & Supply Corp., Providence, R. I.
UNITEK—Unitek Corp., Pasadena, Cal.
UNITEX—Brickfire. Quigley Co., Inc., New York, N. Y.
UNITITE—Hand operating valve. Hanna Engineering Works, Chicago, Ill.
UNITUBE—Jig and fixture system. Wharton and Wilcocks of America, Inc., New York 4, N. Y.
UNIVALVES—Welded bonnet valves. Edward Valves Inc., East Chicago, Ill.
UNIVERSAL—Bonded abrasive products. Universal Wheel & Abrasive Products, Chicago, Ill.
UNIVERSAL—Machine for inserting and removing valves from compressed gas cylinders. Independent Engineering Co., O'Fallon, Ill.
UNIVERSAL—Metalspray gun. Metalspray Co., Los Angeles, Calif.
UNIVERSAL—Welding torch. National Cylinder Gas Co., Chicago, Ill.
UNIVERSAL—Resistance welders. Universal Welder Corp., Cleveland, Ohio.
UNIVERSAL—Welding ground clamp. Mueller Electric Co., Cleveland, Ohio.
UNIVERSAL—Girth welder. Morton Mfg. Co., Muskegon Heights, Mich.
UNIVERSAL BALANCED — Welding positioners. Aronson Machine Co., Arcade, N. Y.
UNIVERSAL No. 1200—Silver brazing fluxes. The American Platinum Works, Newark, N. J.
UNIVERSAL PRESSURE—Welding and cutting torches. Harris Calorific Co., Cleveland, Ohio.
UNIWELD 275—Portable spot welder. Welding Service and Supplies Co., Cicero, Ill.
UNOX—Penetrant. Carbide and Chemical Div. of Union Carbide and Carbon Corp., New York, N. Y.
UPTON—Heat treating furnaces. Commerce Pattern & Machine Co., Detroit, Mich.
UTIL-A-TOOL—Push and pull jacks. Templeton, Kenly & Co., Inc., Broadview, Ill.
UTICA TOOLS—Pliers and wrenches. Utica Drop Forge & Tool Corp., Utica, N. Y.
UTILITY—Bench & floor grinders. Clizbe Bros. Mfg. Co., Plymouth, Ind.
UTILITY—Floodlights. Benjamin Electric Mfg. Co., Des Plaines, Ill.
UTILITY—Blast cleaner. Vacu-Blast Co., Inc., Belmont, Calif.

V

V-R—Carbide tools, blank & dies. Vascoloy-Ramet Corp., Waukegan, Ill.
V MANGANICK—Moly manganese electrode in either coated or bare, coated DC or AC bare DC. Hobart Bros. Co., Troy, Ohio.
V-MANG—Molybdenum — austenitic — manganese rod. American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.
VACU-BLASTER—Dustless blast cleaning machine. Vacu-Blast Co., Inc., Belmont, Cal.
VALENCIA—Abrasive grain pumice. Whittaker, Clarke & Daniels Inc., New York, N. Y.
VALVALOY—Cast high alloy material. Wearaloy Co., Los Angeles, Calif.
VALVE-ALLOY—Impact resistant alloy. Resisto-Loy Co., Grand Rapids, Mich.
VANCO—Percussive butt welders. The Taylor-Winfield Corp., Warren, Ohio.
VANDE—Metallizing gun; air regulator and fitter; wire feeding machine; spray lathe and shaft repairing tool. Vande Manufacturing Co., Chicago, Ill.
VAN DORN—Chipping hammers and tools, bench grinders, portable electric grinders, grinding wheels, sanders and surfacers. Van Dorn Electric Tool Co., Towson, Md.
VANGTRONIC—Stored energy weld panels and bench welders. Vangtronic Corp., Bridgeport, Conn.
VANO—Blowers. Coppus Engineering Corp., Worcester, Mass.
VANOL MODEL 700—Magnetic ground clamps. Vanol Corp., St. Louis, Mo.
VANOX—Vanadium steel rod. Central Steel & Wire Co., New York, N. Y.
VANTROL—Synthetic water-soluble cutting and grinding compound, Van Straaten Chemical Co., Chicago, Ill.
VAPE-SORBER—Oil, vapor removal from air and gas lines. Selas Corp. of America, Philadelphia, Pa.
VAPO-KLEEN—Vapor degreaser. Phillips Mfg. Co., Chicago, Ill.
VAPOR-TITE 40—Inspection equipment, fluorescent ltg., Des Plaines, Ill.
VARI-LINE—Cable connectors. Burndy Engineering Co., New York, N. Y.
VARILUG—Terminal for welding cable. Burndy Engineering Co., New York, N. Y.
VELOCITY POWER—Cable power. Mine Safety Appliances Co., Pittsburgh, Pa.
VENTA-MINE—Exhaust fans. Guyan Mach. Co., Logan, W. Va.
VENTAIR—Blowers. Coppus Engineering Corp., Worcester, Mass.
VENT-A-WELD—Welding table. Papec Machine Co., Shortsville, N. Y.
VENTURE—Synthetic rubberized tubing. E. I. du Pont de Nemours and Co., Inc., Wilmington, Del.
VERITAS—Grinding wheel dressers. Sandvik Saw & Tool, New York, N. Y.
VERNIER-SET—Interval timers. Automatic Temperature Control Co., Inc., Phila., Pa.
VERSA-VISE—Vise. The Will-Burt Co., Orville, Ohio
VACU-BLASTER—Dustless grit blasting equipment. Vacu-Blast Co., Inc., San Mateo, Calif.
VERSI-LINK—Connector. Burndy Engineering Co., New York, N. Y.
VERSI-TAP—Tee, splice or parallel connector. Burndy Engineering Co., Inc., New York, N. Y.
VERSON—Bending brakes, bending and trimming and stamping dies. Verson Allsteel Press Co., Chicago, Ill.
WELDMATIC—Unitek Corp., Pasadena, Cal.
VERTEX—Arc welding electrode. Metal & Thermit Corp., New York, N. Y.
VEVAC—Underwater jetting nozzle. Craftsweld Equipment Corp., Long Island City, N. Y.
VIBRATION DAMPENERS—Shock absorber. J & H Products Co., Dallas, Texas.
VIBRATION SERVICE—Incandescent lamps. Champion Lamp Works, Lynn, Mass.
VIBRA WELD—Cold welder and bonder. Mid-States Equipment Corp, Chicago, Ill.
VIBRO-ARC—Magnetic motor driven electrode holder. Glenn-Roberts Co., Oakland, Calif.
VICPHOSCO—Phosphor bronze electrodes. Victor Equipment Co., San Francisco, Calif.
VICSILCO—Silicon bronze electrodes. Victor Equipment Co., San Francisco, Calif.
VICTOR—Hose. Mulconroy Co., Philadelphia, Pa.
VICTOR—Balata belting. Victor Balata & Textile Belting Co., New York, N. Y.
VICTOR—Welding and cutting torches, pressure reducing regulators, flowmeters, acetylene gas generators, cylinder manifolds, welding rods and electrodes, fluxes, electrode holders and accessories and supplies. Victor Equipment Co., San Francisco, Calif.
VICTOR—Welding and power cable. Victor Electric Wire & Cable Corp., Clifton, N. J.
VICTOR ALLOY—Hard facing rod. Victor Equipment Co., San Francisco, Calif.
VICTORITE—Hard facing rod. Victor Equipment Co., San Francisco, Calif.
VICTOR SUPERTITAN—Blasting nozzles. Victor Equipment Co., San Francisco, Calif.
VICTORTUBE—Hard facin rod. Victor Equipment Co., San Francisco, Calif.
VICTOR TUNGSMOOTH—Hard facing rod. Victor Equipment Co., San Francisco, Calif.
VICTORY POINTS—Grinding wheels. Simonds Abrasive Co., Philadelphia, Pa.
VICTROMETER—A flowmeter for pressure regulators. Victor Equipment Co., San Francisco, Calif.
VICTRON—Exhaust fans. Victor Electric Products, Inc., Cincinnati, Ohio.
VIKING—Arc welders, economy spot welders, and air valves. Viking Div. of Mid-States Welder Mfg. Co., Chicago, Ill.
VIKING—Fire brick. Mexico Refractory Co., Mexico, Mo
VISE-GRIP—Welding clamps & wrenches. Petersen Manufacturing Co., Inc., De Witt, Neb.
VISEPRESS—Combination hydraulic vise and press. Studebaker Machine Co., Chicago, Ill.
VISE WRENCH—Quick-acting toggle type wrench. Lapeer Mfg. Co., Lapeer, Mich.
VISOR-TUC—Spectacles. Watchemoket Optical Co., Inc., Providence, Rhode Island.
VITALIZER—Filter-lubricator. Norgren Co., C. A., Denver, Colo.
VIXEN—Milled curved tooth files. Heller Brothers Co., Newark, N. J.
VOCO—Acetylene and oxygen. Valley Oxygen Co., Bay City, Mich.
VOGEL—Cut-off machine, tubing. Vogel Tool & Die Corp., Chicago, Ill.
VOLZ—Plate lifting clamp. Merrill Bros., Inc., Maspeth, N. Y.
VON CHIP—High speed steel bits. Firth Sterling Steel & Carbide Corp., Pittsburgh, Pa.
VULC-ALLOY—Steel alloy chain. The Cleveland Chain & Mfg. Co., Cleveland, Ohio.
VULCAN—Electrode holders. The Fibre-Metal Products Co., Chester, Pa.
VULCANITE—Grinding wheels and centerless regulating wheels. U. S. Rubber Co., Fort Wayne, Ind.
VULCAN—Stress relieving furnaces. Vulcan Corp., Philadelphia, Pa.
VULCAN—Electric soldering irons, melting pots for solder, glue, waxes and compounds and electric heaters. Vulcan Electric Co., Danvers, Mass.
VULCAN—Clamps, lathe dogs, chain pipe tongs and vises, hoist hooks, eye bolts. J. H. Williams & Co., Buffalo, N. Y.
VULCAN—LPGas—air torches, tips, etc. Purity Cylinder Gases, Inc., Grand Rapids, Mich.
VULCOID—Material used in the head harness of welder's helmets. Sellstrom Mfg. Co., Chicago, Ill.
VYCOR BRAND—Heat resisting glass. Corning Glass Works, Corning, N. Y.

W

WB—Weldbrazing alloys and fluxes. Uniworld Research Corp. of America, Cleveland, Ohio
W BOROLON—Grinding wheels. Simonds Abrasive Co., Philadelphia, Pa.
WGP—Fluxes. Welding Gas Products Co., Chattanooga, Tenn.
W. K. S.—Oxy-Acy, cylinder truck. Pioneer Welding Mfg. Co., Kalamazoo, Mich.
W. O. NO. 1—Rust remover. Turco Products, Inc., Los Angeles, Calif.
WW—Resistance welding alloys, holders and electrodes. Weiger, Weed & Co., Detroit, Mich.
WAITCUS—Spot welder. The Central Sales Corp., Chicago, Ill.
W-AL-CO—Welding fluxes, welding lenses and goggles. Welding Alloys Mfg. Co., Newark, N. J.
WALCO—Pipe wrench. Walworth Co., New York, N. Y.
WALES—Drilling and boring machine. Wales-Strippet Corp., N. Tonawanda, New York.
WALL—Oxygen, acetylene, hydrogen and equipment. Wall Chemicals Div., The Liquid Carbonic Corp., Chicago, Ill.
WALLACE—Bending machines. Wallace Supplies Mfg. Co., Chicago, Ill.
WALLEX—Hardfacing alloy rod and powder. Wall Colmonoy Corp., Detroit, Mich.
WALLOY NO. 6—Chrome-cobalt-tungsten hardfacing alloy. Wall Colmonoy Corp., Detroit, Mich.
WALLTITE—Blast burner. Eclipse Fuel Engineering Co., Rockford, Ill.
WALMANG—Manganese-nickel steel welding rod. Wall Colmonoy Corp., Detroit, Mich.
WALSEAL—Valves, fittings and flanges. Walworth Co., New York, N. Y.
WALWORTH—Valves, fittings and pipe wrenches. Walworth Co., New York, N. Y.
WARCO—Mechanical presses. The Federal Machine & Welders Co., Warren, Ohio.
WARDEN—Shut off valve. Security Valve Co., Los Angeles, Calif.
WARRIOR—Lightweight pedestal for automatic welding. Cayuga Machine & Fabricating Co., Inc., Depew-Buffalo, N. Y.
WARREN ALLOY—Bending and stamping dies, jigs and fixtures. Warren Alloy, Pontiac, Mich.
WARWICK—Wrought iron hoisting chains. Newhall Chain Forge & Iron Co., Westwood, N. J.
WASP—DC arc welder. Air Reduction Sales Co., New York, N. Y.
WATER MIZER—Water saving unit for resistance welders. Van Vooren Products, East Moline, Ill.
WAVERLESS FLAME—Oxygen regulator of the 2-stage or multi-stage type. K-G Welding Co., Inc., New York, N. Y.
WAYNE—Soldering flux. Wayne Chemical Products Co., Detroit, Mich.
WEAR ARC—Electrodes, hard-facing. Alloy Rods Co., York, Pa.
WEAR DEVIL—Hard-facing electrodes. Champion Rivet Co., Cleveland, Ohio.
WEARALOY—Cast alloy rods. Wearaloy Co., Los Angeles, Calif.
WEAR-CRAFT—Manganese-nickel electrodes. Allied Weldcraft, Inc., Indianapolis, Ind.
WEAREVER—Scratch brush. Universal Power Corp. Cleveland, Ohio.
WEAR-EX—Alloy steel applicator bar. Pyramid Steel Co., Cleveland, Ohio
WEAR-FLAME—Flame weld hard facing rods. Alloy Rods Co., York, Pa.
WEAR-SHARP—Patented corrugated dipper tooth repointer. American Manganese Steel Div., American Brake Shoe Co., Chicago, Ill.
WEARWELD—Hardsurfacing electrode. Lincoln Electric Co., Cleveland, Ohio.
WEBB—Plate bending rolls. The Webb Corp., Webb City, Mo.
WEBB STEELWORKER—Combination punch and shear. The Webb Corp., Webb City, Mo.
WEDGE-GRIP—Wire connector. H. B. Sherman Mfg. Co., Battle Creek, Mich.
WEDGE-LOCK—Steel Shelving. Berger Mfg. Div. of Republic Steel Corp., Canton, Ohio.
WEDGIE—Porta-power spred ram. Blackhawk Mfg. Co., Milwaukee, Wis.
WEGEWELL—Bronze welding rods. Titan Metal Mfg. Co., Bellefonte, Pa.
WEIGER-WEED—Resistance welding electrodes. Fansteel Metallurgical Corp., N. Chicago, Ill.
WEIGER-WEED—Spot seam and projection welding electrodes, electrode holders and tungsten carbide inserts. Weiger, Weed & Co., Division of Fansteel Metallurgical Corp., Detroit, Mich.
WELCO—Oxygen and acetylene. Welding Gas Products Co., Chattanooga, Tenn.
WELCO—Safety goggles and face shields of all types. Welsh Mfg. Co., Providence, R. I.
WELD FLUX RS-3L—Pneumatic scaling hammer. Dallet Co., The, Philadelphia, Pa.
WELD FLUX SCALER—Air chisel equipment. The Dallet Co., Philadelphia, Pa.
WELDA—Welding lenses. Harry Buegeleisen, Inc., Brooklyn, N. Y.
WELD-A-CAST—Fluxes for welding and brazing. Cortland Welding Compound Co., Cortland, N. Y.
WELD-AID—Insert for arc welders wearing bifocals. Willson Products, Inc., Reading, Pa.
WELD-AIR-MATIC—Automatic air conversion unit for spot welders. Robt. W. Hoffman Co., Chicago, Ill.
WELDAFLUX—Flux. Tip Top Electric Products Co., New York 18, N. Y.
WELDALL—Spot-welding pliers. Tip Top Electric Products Co., New York 18, N. Y.
WELD-ALLOY—Hard solder. Tip Top Electric Products Co., New York 18, N. Y.
WELDALOY—Spot welding tips, wheels, holders, bar stock alloys and castings. Weldaloy Mfg. Co., Detroit, Mich.
WELDANPOWER—Welder-power unit. The Lincoln Electric Co., Cleveland, Ohio.
WELD-ARC—Electrodes, high tensile, low hydrogen and mild steel. Alloy Rods Co., York, Pa.

WELDCO—Arc welding electrodes, arc welders and accessories. Welding Service Sales, Inc., San Francisco, Calif.
WELDO—Chain-tubing. The Yougstown Welding & Engineering Co., Youngstown, Ohio.
WELD-CRAFT—Hard-facing electrodes. Allied Weld-Craft, Inc., Indianapolis, Ind.
WELDER SPECIAL—Horsehide split welding gloves. E. J. Streichert, Chicago, Ill.
WELD-CUT-PAL KIT—Welding and cutting outfits. Burdett Oxygen Co., Cleveland, Ohio.
WELDELL—Forged steel pipe fittings. Taylor Forge and Pipe Works, Chicago, Ill.
WELD-ENDS—Pipe fittings and pipe welding fittings. Pipe Line Development Co., Cleveland, Ohio
WELDERS—Welding torches, cutting attachments, oxygen and acetylene regulators, cutting, soldering and brazing torches, carbonic and air regulators. The Welders Supply & Mfg. Co., Cincinnati, Ohio
WELDERS ELGIN—Welding rods. Borm Manufacturing Co., Elgin, Ill.
WELDER'S EYE EASE—Eye lotion. Detroit First Aid Co., Detroit, Mich.
WELDER'S EYE LOTION—Eye lotion. Ashton's Drug Stores, Youngstown, Ohio.
WELDER'S MOULDING COMPOUND—Carbon compound. Harris Calorific Co., Cleveland, Ohio.
WELDER'S PAL—Eye drops. Carhoff Co., Cleveland, Ohio.
WELDERULE—Slide rule. General Electric Co., Schenectady, N. Y.
WELDERZ FREND—Acetylene generator. Welderz-Frend Generator Co., Lubbock, Tex.
WELDEX—Resistance welding machines, transformers and accessories. Weldex Inc., Detroit, Mich.
WELD-FAST—Bronze welding rods. Revere Copper and Brass, Inc., New York, N. Y.
WELDFLO—Coated welding electrodes. Williams and Co., Inc., Pittsburgh, Pa.
WELDING MACHINES—Spot, seam, gun, projection and multi-spot resistance welding. Welding Machines Mfg. Co., Detroit, Mich.
WELDIT—Welding and cutting torches, supplies, accessories, etc. Weldit, Inc., Detroit, Mich.
WELDIT AUTOMATIC TORCH—Automatic welding torch. Weldit, Inc., Detroit, Mich.
WELDIT GASAVER—Valves. Weldit, Inc., Detroit, Mich.
WELDITE—Electrodes and welding rods. Chicago Steel and Wire Co., Chicago, Ill.
WELDLITE—Welding lens. Sellstrom Mfg. Co., Chicago, Ill.
WELDMASK—Compound. Turco Products, Inc., Los Angeles, Calif.
WELDMASTER—Unitek Corp., Pasadena, Cal.
WELDMASTER—Welding torches. Modern Engineering Co., Inc., St. Louis, Mo.
WELDMATIC—Precision resistance welder. Unitek Corp., Pasadena, Cal.
WELDMITE—Arc welders. Sterling Utilities Co., Inc., Brooklyn, N. Y.
WELDMOBILE—Self-propelled arc welder. Hobart Bros. Co., Troy, Ohio.
WELDMORE—Carbon arc welding electrode. Lincoln Electric Co., Cleveland, Ohio.
WELDMORE—Welding positioners, jigs & fixtures and turning rolls. Pandjiris Weldmant Co., St. Louis, Mo.
WELD-O-VENT—Welding fume exhauster. Engwald Corp., Brooklyn, N. Y.
WELDOLETS—Welding fittings. Bonney Forge and Tool Works, Allentown, Pa.
WELDOMATIC—Automatic arc welding head, control and machines. Westinghouse Electric Corp., East Pittsburgh, Pa.
WELD-O-TROL—Electronic controls, seam and spot welding contactors. Westinghouse Electric Corp., E. Pittsburgh, Pa.
WELDPLATE—Pipe Line Development Co., Cleveland, Ohio.
WELDPOWER—A. C. and stored energy resistance welders and controls. Raytheon Mfg. Co., Waltham, Mass.
WELD PROBER—Weld testing and sampling machine. The Fibra-Metal Products Co., Chester, Pa.
WELDRAWN—Welded and cold drawn tubing in stainless steels, nickel and nickel alloys and beryllium copper. Superior Tube Co., Norristown, Pa.
WELDRITE POROSEAL—Compound. Electric Welding Machine Co., Detroit Mich.
WELDRITE WELDERS—Seam arc spot and butt electric welding machines. Electric Welding Machine Co., Detroit, Mich.
WELD-ON—Plow share edges, cultivator points, lister share points, planter runner edges, etc. Osmundson Spade Mfg. Co., Perry, Ia.
WELDSAFE—Welding lenses. Sellstrom Mfg. Co., Chicago, Ill.
WELDSTEEL—Utility pipe and bar clamp. Grand Specialties Corp., Chicago, Ill.
WELD-X—Spatter preventative. Kelite Products Inc., Los Angeles, Calif.
WELLS—Metal cutting band saws. Wells Mfg. Corp., Three Rivers, Mich.
WELSHARD—Cover, glass and goggle lenses. Welsh Manufacturing Co., Providence, R. I.
WELSH-GUARD—Lightweight goggles. Welsh Mfg. Co., Providence, R. I.
WELSHWELD—Goggles, helmets, and lenses for same. Welsh Mfg. Co., Providence, R. I.
WELTRONIC—Electronic controls. Weltronic Co., Detroit, Mich.
WEN-LYN—Pneumatic, chipping and scaling hammer. Wen-Lyn Products, Burbank, Calif.
WESLAC—Welding cement. Wesley Lacquer Co., Brooklyn, N. Y.
WESLO—Chain. Western Chain Co., Chicago, Ill.
WESTON—Differential chain hoists. David Round & Son, Cleveland, Ohio.
WESTON—Current measuring instruments, pyrometers and general purpose relays. Weston Elec. Instrument Co., Newark, N. J.
WESTOIL—Non acid flux. Farrelloy Co. Philadelphia, Pa.
WESTINGHOUSE—Electric arc welding equipment. Westinghouse Electric Corp., E. Pittsburgh, Pa.
WETOIL—Non-acid flux. Farrelloy Co., Philadelphia, Pa.
WETZLER—Adjustable clamps. Wetzler Clamp Co., Long Island City, N. Y.
WETZLER WELDMASTER NO. 88—Clamps. Wetzler Clamp Co., Long Island City, N. Y.
WHARTON—Gas cylinders for oxygen, hydrogen, etc. Taylor-Wharton Iron and Steel Co., Easton, Pa.
WHEELABRATOR—Airless abrasive blast cleaning equipment and steel shot abrasive. American Wheelabrator & Equipment Corp., Mishawaka, Ind.
WHEELABRATOR SWING TABLE, 72-in.,—Table type, airless blast cleaner. American Wheelabrator & Equipment Corp., Mishawaka, Ind.
WHEELER—Plow points. Star Mfg. Co., Division of Illinois Iron & Bolt Co., Carpentersville, Ill.
WHEELRITE—Cylinder trucks. Weldrite Co., Inc., Long Island, N. Y.
WHIPPET—Electric hoist. Ford Chain Block Div. of Amer. Chain & Cable Co., Inc., New York, N. Y.
WHIRLWIND—Wire wheel brushes. The Black & Decker Mfg. Co., Towson, Md.
WHIRLWIND—Air cooling system. Ergolyte Mfg. Co., Philadelphia, Pa.
WHITE CHIEF—Steel tape rule. Carlson & Sullivan, Inc., Monrovia, Calif.
WHITE FLASH—Shielded arc electrodes. Central Steel and Wire Co., Chicago, Ill.
WHITE FLUX COATED 18-8 STAINLESS STEEL—Steel Sales Corp., Chicago, Ill.
WHITTEMORE—Strain gauge. Baldwin Southwark Division, The Baldwin Locomotive Works, Philadelphia, Pa.
WHIZ—Compound. R. M. Hollingshead Corp., Camden, N. J.
WICKWIRE—Wire rope slings. Wickwire Spencer Steel Co., New York, N. Y.
WIESE WORLD BRAND—Cultivator shovels and sweeps. Wiese Plow Welding Co., Perry, Iowa.
WIL-WELD—Welding fluxes. Tolman Manufacturing Co. Boston, Mass.
WILL-WELD—AC welding equipment. Will-Weld Mfg. Co., Omaha, Neb.
WILLIAMS—Wrenches, tool holders, pliers, screw drivers, punches and chisels. J. H. Williams & Co. Buffalo, N. Y.
WILLSON—Goggles, respirators, gas masks, welding helmets, shields, etc. Willson Products, Inc., Reading, Pa.
WILLSONITE—Tinted glass for flash goggles. Willson Products, Inc., Reading, Pa.
WILLSON-WELD—Filter glass. Willson Products, Inc., Reading, Pa.
WILMINGTON FIBRE—Vulcanized fibres available in sheets, rods, tubes and shapes, such as electrode holder handles, knobs, washers, shims, etc. Wilmington Fibre Specialty Co., New Castle, Wilmington, Del.
WILTON—Vises and C clamps. Wilton Tool Manufacturing Co., Chicago, Ill.
WINGFOOT—Corrugated welding hose. Goodyear Tire and Rubber Co.; Inc., Akron, Ohio.
WINTERGARDE—Fire extinguisher. Pyrene Manufacturing Co. Newark, N. J.
WINTERIZERS—Washable helmet liners for cold weather. Jackson Products, Inc., Warren, Mich.
WIRE-NUTS—Wire connectors. Ideal Industries, Inc., Sycamore, Ill.
WISCONSIN—Air-cooled engines. Wisconsin Motor Corp., Milwaukee, Wis.
WISSCO—Gas and electric welding wire. Wickwire Spencer Steel Co., New York, N. Y.
WITT—Welding gas pressure gauges. Witt Gauge Co., Eau Claire, Wis.
WIX—Welding gloves. Wickman Glove Co., Berkley, Calif.
WIZARD JR.—Chrome-clad tape-rules. The Lufkin Rule Co., Saginaw, Mich.
WODACK DO-ALL—Combination electric drill and hammer. Wodack Electric Tool Corp., Chicago, Ill.
WONDER FLUX—Silver brazing flux. Sherman & Co., Flushing, L. I.
WORK SHOP KIT—Welding outfits. Burdett Oxygen Co., Cleveland, Ohio.
WOVEN-GARD—Mitts, handspats, gloves, arm guards. Industrial Glove Corp., Danville, Ill.
WRAP-AROUND—Pipe-layout templates. Ree Associates, Bogota, N. J.
WRIGHT—Hoists and cranes. Wright Hoist Div. of Amer. Chain & Cable Co., Inc., York, Pa.
WW-1W-RWMA—Resistance welding electrodes. Weiger Weed & Co., Detroit, Mich.
WW-10W-RWMA—Resistance welding electrodes. Weiger Weed & Co., Detroit, Mich.
WW-20W-RWMA—Resistance welding electrodes. Weiger Weed & Co., Detroit, Mich.
WW-100W-RWMA—Resistance welding electrodes. Weiger Weed & Co., Detroit, Mich.
WW STERLITH—Grinding wheel. Sterling Grinding Wheel Div., The Cleveland Quarries Co., Tiffin, Ohio.
WYCO—Flexible shafts, flexible shaft grinders, buffers, machines, speed saws & grinding wheels. Wyzenbeek & Staff, Inc., Chicago, Ill.
WYPO—Welding and cutting torch tip cleaners. Maitlen & Benson, Inc., Long Beach, Calif.

X

X-54—Paint, lacquer and enamel stripper. Diversey Corp., Chicago, Ill.
XL—Hardened clear lens. Sellstrom Mfg. Co., Chicago, Ill.
X FLEX—Welding cables. Universal Welder Corp., Cleveland, Ohio.
XX SPECIAL—Welding rods. K-G Equipment Co., Inc., New York, N. Y.
XXXX NICKEL—Babbitt Metal. Federated Metals Div., American Smelting & Refining Co., New York, N. Y.
XACTLITE—Temperature control. Claud S. Gordon Co., Chicago, Ill.
XCEL-FLUX—Welding and brazing compounds, kits, torch outfits and silver soldering paste. American Products Co., Chicago, Ill.
XRAYOGRAPH—Flame cutting machine. Air Reduction Sales Co., New York, N. Y.
XTRA-LITE—Plastic cover lens and plates. Sellstrom Mfg. Co., Chicago, Ill.
X-TRON 180—Portable X-ray unit. Mitchell Radiation Products Corp., Norristown, Pa.
XYRON—Improved consumable electrode for machinable welds on cast iron. Eutectic Welding Alloys Corp., Flushing, N. Y.

Y

YELLOW JACKET—Engine driven arc welder. Air Reduction Sales Co., New York, N. Y.
YELLOW STRAND—Wire rope. Broderick & Bascom Rope Co., St. Louis, Mo.
YELLOW-STRIPE—Aluminum oxide, papers and cloth. Clover Mfg. Co., Norwalk, Conn.
YORK'S—Tinning and boiler compounds. York Engineering Co., Chicago, Ill.
YORK'S No. 77—Brazing and welding flux. York Engineering Co., Chicago, Ill.
YOUNG BROTHERS—Industrial ovens. Young Brothers Co., Cleveland, Ohio.

Z

ZB—Blast burner. Eclipse Fuel Engineering Co., Rockford, Ill.
Z NICKEL—Nickel heat treatable alloy. The International Nickel Co., New York, N. Y.
ZEPHER—Machine tool. DoAll Co., Des Plains, Ill.
ZEPHER—Portable electric drills, sprayers, saws and sander-polishers. Portable Electric Tools, Inc., Chicago, Ill.
ZEPHYRWELD—Welding fittings. Tri-Clover Machine Co., Kenosha, Wis.
ZETLAN—Fire retardants. Wayne Chemical Products Co., Detroit, Mich.
ZEVA—Electric soldering tool. Paul C. Roche Co., Inc., New York 7, N. Y.
ZIG-ZAG—Burners. Gas Appliance Service Inc., Chicago, Ill.
ZINCILATE—Anti-Corrosive paint. Industrial Metal Protectives Inc., Dayton, Ohio
ZIP-LIFT—Electric hoist. Harnischfeger Corp., Milwaukee, Wis.
ZIP—Portable spot welder. Mid-States Welder Mfg. Co., Chicago, Ill.
ZIP 24 AND 27—Iron-powder electrodes. Westinghouse Electric Corp., Pittsburgh, Pa.
ZIPPER-ET—Portable arc welder. Mid-States Welder Mfg. Co., Chicago, Ill.
ZIRTUNG—Welding electrodes. Sylvania Electric Products, Inc., Towanda, Pa.
ZYGLO—Inspection equipment and metals. Magnaflux Corp., Chicago, Ill.

When writing

to our Advertisers

Please mention

WELDING ENGINEER'S

1955 Fact File Issue

NAMES AND ADDRESSES

IN this section are arranged alphabetically the names of manufacturers of welding equipment, tools and supplies whose products are listed in the Classified List, together with their addresses. Only one address is given for each company, that being its main or general sales office, or the one otherwise specified by the company —except where manufacturing activities are so divided between two or more plants of a company that certain lines are produced in one plant while others are made elsewhere and orders should be placed according to the plants in which they are manufactured.

Disregard individual's initials or the word "The" in locating the name of a manufacturer. The name of a company such as D. B. Gorbound & Co. would be listed "Gorbound, D. B., & Co." Where the prefix "The" is used, a company is listed as follows: "Morgan Co., The." Where initials form the main part of a name, as, for instance, "B. & R. Pipe Co." the names of such companies are grouped with others of a similar type at the start of listings appearing under the first initial. For instance, "B. & R. Pipe Co." would be found among the first few names appearing under "B."

For convenience, we have generally used "Co." instead of "Company" and "Corp." instead of "Corporation," regardless of whether the company or corporation spells out the word. Similarly, we use "Inc." uniformly instead of "Incorporated."

A

A & A Mfg. Co., 2017 W. Clybourn St., Milwaukee 3, Wis.
Abrasive Products, Inc., 110 Pearl St., South Braintree, Mass.
Ace Drill Corp., 2600 E. Maumee, Adrian, Mich.
Acet-A-Tips Co., 5069 W. Madison St., Chicago 44, Ill.
Acetogen Gas Co., 20137 Sherwood Ave., Detroit 34, Mich.
Acetylene Gas Co., 3411 Pine Blvd., St. Louis 3, Mo.
Acetylene Service Co., 1105 Zuni St., Denver 4, Colo.
Acme Elec. Welder Co., 2618 Fruitland Ave., Los Angeles 58, Calif.
Acme Mfg. Co., 1400 E. Nine Mile Road, Detroit 20, Mich.
Acme White Lead & Color Works, 8250 St. Aubin Ave., Detroit 11, Mich.
Acorn Iron and Supply Co., Delaware Ave. and Poplar St., Philadelphia, Penn.
Acro Welder Mfg. Co., 1825 West St. Paul Ave., Milwaukee 3, Wis.
Acromark Co., 9-13 Morrell St., Elizabeth 4, N. J.
Actarc Inc., 5806 Hough Ave., Cleveland 3, Ohio
Adams Alloy Company, P. O. Box 286, Wakita, Okla.
Adapt-All Tip Co., 3833 Wilshire Blvd., Los Angeles 5, Calif.
Adjustable Clamp Co., 426 North Ashland Ave., Chicago 22, Ill.
Adler Mfg. Co., 5085 N. Broadway, Chicago 40, Ill.
Advance Glove Mfg. Co., 901 W. Lafayette St., Detroit 26, Mich.
Aeroil Products Co., Inc., Westley St., South Hackensack, N. J.
Aeroprojects, Inc., 310 E. Rosedale Ave., West Chester, Pa.
Aeravox Corp., 740 Belleville Ave., New Bedford, Mass.
Aetna Cylinders, Inc., 19345 John R St., Detroit 3, Mich.
Aget Mfg. Co., Adrian, Mich.
Agnew Electric Co., 123 S. Main St., Milford, Mich.
Air Controls, Inc., 2310 Superior Ave., Cleveland 14, Ohio
Air Equipment Corp., 1355 Michigan St., N.E., Grand Rapids, Mich.
Air Filter Corp., 108 N. Water St., Milwaukee 2, Wis.
Air Products, Inc., P.O. Box 538, Allentown, Pa.
Air Reduction Sales Co., Div., Air Reduction Co., Inc., 60 E. 42nd St., New York 17, N. Y.
Airtherm Mfg. Co., 700 S. Spring Ave., St. Louis 10, Mo.
Aircraft-Marine Products, Inc., 1523 N. Fourth St., Harrisburg, Pa.
Aircraft Standard Parts Co., 41 S. 6th St., Newark 7, N. J.
Aircraft Tools, Inc., 2306 E. 38th St., Los Angeles 11, Calif.
Airline Welding & Engineering, Hawthorne, Calif.
Ajax Elec. Co., Inc., Frankford Ave. at Delaware Ave., Phila. 23, Pa.
Ajax Electrothermic Corp., Ajax Park, Trenton 5, N. J.
Alabama Oxygen Co., 2020 Vanderbilt Rd., Birmingham, Ala.
Aladdin Rod & Flux Mfg. Co., 1300 Burton St., S. E., Grand Rapids 7, Mich.
Alaska Oxygen Co., Box 351, Fairbanks, Alaska.
Albertson Co., 3100 Lowell Ave., Sioux City 3, Iowa
Alcar Instruments, Inc., Div. of Eastern Electro-Sonic Industries Corp., 595 Madison Ave., New York 22, N. Y.
Aldan Oxygen Mfg. Co., Inc., Oak Lane & B&O Railroad, Collingdale, Del. Co., Pa.
Alemite Div., Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago 14, Ill.
Alfco Laboratories, 2415 W. Belmont Ave., Chicago 18, Ill.
Aljay Mfg. Co., Inc., 1516 Callowhill St., Philadelphia 30, Pa.
Allegheny Ludlum Steel Corp., H. W. Oliver Bldg., Pittsburgh 22, Pa.
Allen Co., L. B., 6719 W. Bryn Mawr Ave., Chicago 31, Ill.
Allen Electric & Equipment Company, 2101 North Pitcher St., Kalamazoo, Mich.
Allen Mfg. Co., W. D., 566 W. Lake St., Chicago, Ill.
Allen Optical Co., Sani Spray Division, 17 Allen St., Buffalo 2, N. Y.
Allied Prod. Co., 1133 Newport Ave., Chicago 13, Ill.
Allied Tractor & Steel Prod. Corp., 7835 Broadway, Cleveland 5, Ohio
Allied Weld-Craft, Inc., 401 W. South St., Indianapolis 4, Ind.
Allmend Bros. Mfg. Co., 1315 4th Ave., Holdrege, Nebr.
Alloy Ring Service, 1095 E. 52nd St., Indianapolis 5, Indiana.
Alloy Rods Company, York 16, Pa.
Alloy Specialties Co., 2441 Waverly Ave., Swissvale, Pa.
Alloy Sprayer Co., 602 First Natl. Bk. Bldg., Ann Arbor, Mich.
All-State Welding Alloys Co., Inc., 249-55 Ferris Ave., White Plains, N. Y.
Alpha Metals, Inc., 56 Water St., Jersey City 4, N. J.
Alphil Spot Welder Co., 1058 Pacific St. Brooklyn 16, N. Y.
Al-Rod Co., The, 2136 Mallory St., San Bernardino, Calif.
Aluminum Wire Prod. Co., Inc., 9 Naubuc Ave., Glastonbury, Conn.
Aluminum Co. of America, Alcoa Bldg., Mellon Sq., Pittsburgh 19, Pa.
Aluminum Solder Corp., 10 E. 52nd St., New York 22, N. Y.
Alwerth Chemical Corp., 366 Madison Ave., New York, N. Y.
American Agile Corp., 5461 Dunham Road, Maple Heights, Ohio
American Allsafe Co., Inc., 1245 Niagara St., Buffalo 13, N. Y.
American Arc Welders, Inc., Roseau, Minn.
American Blower Corp., 8111 Tierman Ave., Detroit 32, Mich.
American Brass Co., The, American Metal Hose Branch, 698 So. Main St., Waterbury 20, Conn.
American Brass Co., The, 414 Meadow St., Waterbury 20, Conn.
American Cable Div. of American Chain & Cable Co., Inc., 271 S. Pennsylvania Ave., Wilkes-Barre, Pa.
American Car & Foundry Co., 30 Church St., New York 7, N. Y.
American Carbide & Chem. Corp., 3411 Pine St., St. Louis 3, Mo.
American Chain Div. of American Chain & Cable Co., Inc., York, Pa.
American Compressed Gas Products, Inc., 5300 S. Hanna St., Ft. Wayne 5, Ind.
American Crayon Co., The, 1706 Hayes Ave., Sandusky, Ohio.
American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N. Y.
American Diamond Saw Co., 519 N. W. Park Ave., Portland 9, Ore.
American Elec. Fushion Corp., 2604 Diversey Blvd., Chicago 47, Ill.
American ELIN Corp., 1 Wall St., New York, N. Y.
American Equipment Co., 7 Albion St., Paterson, N. J.
American Fork & Hoe Co., 1623 Euclid Ave., Cleveland 15, Ohio.
American Gas & Chemical Co., 111 S. 4th St., Harrison, N. J.
American Gas & Chemicals, Inc., 45 Rockefeller Plaza, N. Y. 20, N. Y.
American Handle Co., P.O. Box 385, Jonesboro, Ark.
American Industrial Safety Equip. Co., 3500 Lakeside Ave., Cleveland 14, Ohio.
American LaFrance-Foamite Corp., 925 E. La France St., Elmira, N. Y.
American Machinery & Foundry Co., 261 Madison Ave., New York 16, N. Y.
American Magnesium Corp., 2210 Harvard St., Cleveland 5, Ohio.
American Manganese Steel Div., American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill.
American Metal Hose Branch, American Brass Co., 698 S. Main St., Waterbury 88, Conn.

American Metal Products Co., 34 So. Bridge St., Worcester, Mass.
American Nickeloid Co., 1501 2nd St., Peru 7, Ill.
American Optical Co., 3 Mechanic St., Southbridge, Mass.
American Oxygen Service Corp., 600 Essex St., Harrison, N. J.
American Photo Copy Equip. Co., 2849 N. Clark St., Chicago 14, Ill.
American Pipe Tool Co., 4056 W. Kinzie St., Chicago 44, Ill.
American Platinum Works, The, 231 N. J. R. R. Ave., Newark 5, N. J.
American Product Corp., 422 South Dearborn St., Chicago 5, Ill.
American Pullmax Co., Inc., 2455 N. Sheffield Ave., Chicago 14, Ill.
American Pulverizer Co., 1525 Macklind Ave., St. Louis, Mo.
American Relay-Welder Co., 58 Frelinghuysen Ave., Newark 5, N. J.
American Sand Banum Co., Inc., 9 Rockefeller Plaza, New York 20, N. Y.
American Scale Co., 919 Baltimore Ave., Kansas City 6, Mo.
American Schaeffer & Budenberg Instr. Div., Manning, Maxwell & Moore, Inc., Bridgeport, Conn.
American Silver Co., Inc., 3607 Prince St., Flushing 54, N. Y.
American Smelting & Refining Co., Federated Metals Div., 120 Broadway, New York 5, N. Y.
American Solder & Flux Co., 19th & Willard St., Philadelphia, Pa.
American Stamping Co., 310 E. Burnham St., Battle Creek, Mich.
American Steel & Wire Co., Rockefeller Bldg., 614 Superior Ave., N. W., Cleveland 13, Ohio.
American Transformer Co., 178 Emmet St., Newark 5, N. J.
American Vacuum Co., 816 S. Michigan Ave., Chicago 5, Ill.
American Ventilating Hose Co., 100 Park Ave., New York 17, N. Y.
American Welding Alloys Corp., 124 57th St., Brooklyn 20, N. Y.
American Wheelabrator & Equipment Corp., 1331 S. Byrkit St., Mishawaka, Ind.
Ames, B. C. Co., 26 Ames St., Waltham 54, Mass.
Ames Spot Welder Co., Inc., 1328 58th St., Brooklyn 19, N. Y.
Ampco Metal, Inc., 1701 S. 38th St., Milwaukee, Wis.
Ampco Twist Drill Corp., 811 Belden St., Jackson, Mich.
Amperex Electronic Corp., 230 Duffy Ave., Hicksville, N. Y.
Ampower Products Co., 5737 W. 87th St., Oak Lawn, Ill.
Anaconda Wire & Cable Co., 25 Broadway, New York 4, N. Y.
Anchor Metal Co., 244 Boerum St., Brooklyn, N. Y.
Andco, Inc., Orchard Park, N. Y.
Anderson Corp., 1039 Southbridge St., Worcester 3, Mass.
Anderson, Albert & J. M., Mfg. Co., 289-305 A St., Boston 10, Mass.
Andreasen, Holger, Inc., 703 Market St., San Francisco 3, Calif.
Andrew King, 67 E. Lancaster Ave., Ardmore, Penn.
Angle Steel Equip. Co., Inc., Elm St., Plainwell, Mich.
Anker Holth Mfg. Co., 2723 Conner St., Port Huron, Mich.
Ansul Chemical Co., Fire Extinguisher Division, 1 Stanton St. Marinette, Wis.
Anthony, F. M., Co., 2022 Oakland Ave., Piedmont 11, Calif.
Anti-Borax Compound Co., Inc., 1506 Wall St., Ft. Wayne 9, Ind.
Anzick Mfg. Co., 23675 Mound Rd., Van Dyke, Mich.
Apollo Steel Co., Oliver Bldg., Pittsburgh, Pa.
Appleton Electric Co., 1701-1759 Wellington St., Chicago 13, Ill.
Arcair Co., P.O. Box 1792, Sta. A, 2614 Burwell St. Bremerton, Wash. and Lancaster, Ohio.
Archer, Inc., Fred C., 606 W. Wisconsin Ave., Milwaukee 3, Wis.
Arcos Corp., 1800 South 60th St., Philadelphia 43, Pa.
Aristo Power Tools, Inc., 601 W. Washington Blvd.,
Armco Steel Corp, 703 Curtis St., Middletown, Ohio.
Armglo Co., 3618 W. Pierce St., Milwaukee 4, Wis.
Armite Laboratories, 6609 Broad St., Los Angeles 1, Calif.
Armor-Tuf Sales Corp., 299 Madison Ave. New York, N. Y.
Armour & Co., Coated Abrasives Div., 1355 W. 31st St., Chicago 9, Ill.
Armstrong-Blum Mfg. Co., 5700 W. Bloomingdale Ave., Chicago 39, Ill.
Armstrong Bros. Tool Co., 5200 W. Armstong Ave., Chicago 30, Ill.
Armstrong Cork Co., Building Material Div., Liberty St., Lancaster, Pa.
Aro Equipment Corp., Enterprise & Trevitt Sts. Bryan, Ohio.
ARO Spotwelders Corp., 87 Hamilton Place, New York, N. Y.
Aronson Machine Co., June St., Box 317, Arcade N. Y.
Arrow Hart & Hegeman Electric Co., 103 Hawthorn St., Hartford 6, Conn.
Ashton's Phamacist, 2724 Mahoning Ave., Youngstown 9, Ohio.
Associated Bag & Apron Co., 2650 W. Belden Ave., Chicago 47, Ill.
Associated Business Counselors, P.O. Box 112, Skokie, Ill.
Athol Machine & Foundry Co., 82 Southington St., Athol, Mass.
Atkins E. C. & Co., 402 S. Illinois St., Indianapolis 9, Ind.
Atkomatic Valve Co., 545 Abbott St., Indianapolis, Ind.
Atlantic Abrasive Corp., 543 Pearl St., S. Braintree, Mass.
Atlantic Metal Hose Co., Inc., 123 W. 64th St., New York, N. Y.
Atlas Abrasives Corp., 459 12th St., Brooklyn 15, N. Y.
Atlas Foundry Co., 545 Lyons Ave., Irvington 11, N. J.
Atlas Press Co., 1710 N. Pitcher St., Kalamazoo 13D, Mich.
Atlas Welding Accessories Co., 707 East Lewiston Ave., Ferndale 20, Mich.
Atlas Welding & Mfg. Co. 2200 W. Pacific Coast Hwy., Long Beach 10, Calif.
Atrex Co., The 240 Day St., Newington 11, Conn.
Aufhauser Bros. Corp., 52 Wall St., New York 5, N. Y.
Aurora Equipment Co., Equito Div., Aurora, Ill.
Auto Arc Weld Mfg. Co., 9615 Meech Ave., Cleveland 5, Ohio
Automatic Gas Flux Co., Public Square Bldg., Cleveland 13, Ohio.
Automatic Temperature Control Co., Inc., 5200 Pulaski Ave., Phila. 44, Pa.
Automatic Welding Co., P.O. Box 3133, Tulsa, Okla.
Automatic Welding Co., 13390 Watertown Plank Rd., Elm Grove, Wis.

B

BMC Mfg. Corp., 5-9 Griswold St., Binghamton, N. Y.
Babcock & Wilcox Tube Co., Alliance, Ohio.
Bache, Semon & Co., 636 Greenwich St., New York 14, N. Y.
Baier Ackerman, Inc., 18 E. 41st St., New York 17, N. Y.
Baker Bros., Inc., Post & Harlean Sts., Toledo, Ohio
Baker Co., Inc., The, Maplewood, Maine
Balbach Co., The, 1201-7 California St., Omaha 2, Neb.
Baldor Electric Co., 4353 Duncan Ave., St. Louis 8, Mo.
Baldwin-Lima-Hamilton Corp., Chester Park, Simpson, & Eddystone, Philadelphia 42, Pa.
Balmar, Franklin, Corp., Woodberry, Baltimore 11, Md.
Balteau Electric Corp., Stamford, Conn.
Banner Mfg. Co., 6820 N. 43rd St., Milwaukee 9, Wis.
Barksdale Valves, 5125 Alcoa Ave., Los Angeles 58, Calif.
Bar-Ray Prods., Inc., 209 25th St., Brooklyn 32, N. Y.
Barnes, W. O., Co., Inc., 1297 Terminal Ave., Detroit 14, Mich.
Barrett-Cravens Co., 3255 W. 30th St., Chicago 23, Ill.
Barth Mfg. Co., The, Milldale, Conn.
Bartlett Mfg. Co., 3003 E. Grand Blvd., Detroit 2, Mich.
Barton Products, Inc., Defiance, Ohio.
H. R. Basford Co., 235 Fifteenth St., San Francisco 3, Calif.
Bastian-Blessing Co., 4201 W. Peterson Ave., Chicago 30, Ill.
Bates Products, Inc., 1129 E. 74th St., Chicago 19, Ill.
Bausch & Lomb Optical Co., 635 St. Paul St., Rochester 2, N. Y.
Bay State Abrasive Products Co., 12 Union St., Westboro, Mass.
Bay State Tap & Die Co., 75 Chauncey St., Mansfield, Mass.
Bearium Metals Corp., 258 State St., Rochester 4, N. Y.
Beaver Pipe Tools, Inc., 310 Dana Ave., Warren, Ohio.
Beaverdell Co., Inc., 2947 N. 8th Ave., Phoenix, Arizona
Becker Bros. Carbon Co., 3450 S. Laramie Ave., Cicero 50, Ill.
Behr-Manning Corp., Box 808, Troy, N. Y.
Belden Mfg. Co., 4647 W. Van Buren St., Chicago 44, Ill.
Belleville Engrg. Co., 367 Broad St., Newark 2, N. J.
Bellevue Industrial Furnace Co., Detroit, Mich.
Bellows Co., The, 230 W. Market St., Akron 9, Ohio
Belmont Abrasives, 285 Newbury St., Boston 15, Mass.
Belmont Smelting & Refining Wks. Inc., 330 Belmont Ave., Brooklyn 7, N. Y.
Bemis Bros. Corp., 325 27th Ave., N.E., Minneapolis, Minn.
Ben-Nek Holder, Inc., 41 W. Main St., Branford, Conn.
Bendtin, Erwin, 77 Summer St., Boston 10, Mass.
Benjamin Elec. Mfg. Co., Northwest Highway & Seegers Rd., Des Plaines, Ill.
Chas. A. Bennett Co., Inc., 237 N. Monroe St., Peoria 3, Ill.
Bentley Weldery Inc., 410 Teall Ave. & Riegel St. P. O. Box 1038, Syracuse 1, N. Y.
Berger Mfg. Div. Republic Steel Corp., 1038 Belden Ave. N. E., Canton 5, Ohio.
Bernard Welding Equip Co., 10222-34 S. Avenue N, Chicago 17, Ill.
Bernz, Otto, Co., Inc., 280 Lyell Ave., Rochester 6, N. Y.
Beryllium Corp., The, Reading, Pa.
Besly-Welles Corp., Beloit, Wis.
Best Effect Chemical Co., 10 E. Lafayette St., Hackensack, N. J.
Bethlehem Steel Co., 701 E. 3rd St., Bethlehem, Pa.
Bierman-Everett Foundry Co., 133 S. 20th St., Irvington 11, N. J.
Big Three Welding Equip. Co., Fort Worth 1, Texas.
Billings & Spencer So., The, 1 Laurel St., Hartford 1, Conn.
Bingrod Co., 633 Jackson St., Kalamazoo 7, Mich.
Binks Mfg. Co., 3114-40 Carroll Ave., Chicago 12, Ill.
Bird Gas Corporation, 12820 Evergreen Rd., Detroit 23, Mich.
Birdsell Mfg. Co., Inc., 750 San Antonio Rd., Palo Alto, Calif.
Bissett Steel Co., 945 E. 67th St., Cleveland 3, Ohio.
Black & Decker Mfg. Co., The, 600 E. Penna Ave., Towson 4, Md.
Black Bros. Co., Inc., The, 501 Ninth Ave., Mendota, Ill.
Blackford Mfg. Co., Inc., 223 S. High St., Hartford City 1, Ind.
Blackhawk Mfg. Co., 5325 W. Rogers, Milwaukee 1, Wisc.
Blaw-Knox Co., Pittsburgh 30, Pa.
Blum, Julius, & Co., Inc., 432 W. 22nd St., New York 11, N. Y.
Bogue Electric Mfg. Co., 54 Iowa Ave., Paterson 3, N. J.
Bond, Charles, Co., 617-623 Arch St., Philadelphia 6, Pa.
Bonney Forge & Tool Works, 354 Green St., Allentown, Pa.
Borg-Warner Corp., Ingersoll Steel Div., 310 S. Michigan Ave., Chicago 4, Ill.
Borm Mfg. Co., 23 N. Union St., Elgin, Ill.
Boss Mfg. Co., The, 221 W. First St., Kewanee, Ill.
Boston Athletic Shoe Co., 25 Thorndike St., Cambridge 41, Mass.
Boston Woven Hose & Rubber Co., P. O. Box 1071, Boston 3, Mass.
Botfield Refractories Co., 796 S. Swanson St., Philadelphia 47, Pa.
Bowser, Inc., 1302 E. Creighton Ave., Ft. Wayne, Ind.
Boyd Welding Supply Co., 160 E. 8th St., Erie, Pa.
Boyer-Campbell Co., The, 6540 St. Antoine St., Detroit 2, Mich.
Bradford Machine Tool Co., 657 Evans St., Cincinnati 4, Ohio.
Brandt Cabinet Works, Inc., Hagerstown, Md.
Branson Instruments, Inc., 430 Fairfield Ave., Stamford, Conn.
Braun, J. G., Co., 609 S. Pauline St., Chicago 12, Ill.
Bridgeport Brass Co., 30 Grand St., Bridgeport 2, Conn.
Bridgeport Chain & Mfg. Co., The, 962 Crescent Ave., Bridgeport 1, Conn.
Bridgeport Safety Emery Wheel Co., Bridgeport, Conn.
Briggs Mfg. Co., Detroit 14, Mich.
Bristol Co., The, Waterbury 20, Conn.
Broderick & Bascom Rope Co., 4203 N. Union Blvd., St. Louis 15, Mo.
Brown & Sharpe Mfg. Co., 235 Promenade St., Providence 1, R. I.
Brown, W. R., Corp., 5720 W. Armitage Ave., Chicago 39, Ill.
Bruce Publishing Co., 400 N. Broadway, Milwaukee 1, Wisc.
Bruner Ivory Handle Co., Hope, Ark.
Brunner Mfg. Co., Inc., 1821 Broad St., Utica 1, N. Y.
Brush Development Co., 3405 Perkins Ave., Cleveland 14, Ohio.
Brush Electronics Co., 3405 Perkins Ave., Cleveland 14, Ohio
Bryant Heater Co., Industrial Div., Cleveland, Ohio.
Buckeye Oxygen Co., 801 First Natl. Bldg., Canton 2, Ohio.
Buckeye Tools Corp., 417 First National Bank Bldg., Canton 2, Ohio.
Buda Co., 154th & Commercial Ave., Harvey, Ill.
Buegeleisen, Harry, Inc., 183 Pacific St., Brooklyn 2, N. Y.
Buehler, Ltd., 165 W. Wacker Dr., Chicago 1, Ill.
Buffalo Bolt Co., 101 East Ave., No. Tonawanda, N. Y.
Buffalo Fire Appliance Corp., 221 Crane St., Dayton 1, Ohio.
Buffalo Forge Co., 490 Broadway, Buffalo 5, N. Y.
Bullard, E. D., Co., 275 8th St., San Francisco 3, Calif.
Bullock, L. H., Co., Inc., 22 8th St., Richmond, Calif.
Bundy Tubing Co., 8109 E. Jefferson Ave., Detroit 14, Mich.
Bunell Machine & Tool Co., 1601 E. 23rd St., Cleveland 14, Ohio
Bunting Brass & Bronze Co., The, 715 Spencer St., Toledo 9, Ohio.
Burdett Oxygen Co., 3330 Lakeside Ave., Cleveland 14, Ohio.
Burdett Oxygen Co. of Calif., 2014 Belgrave Ave., Huntington Park, Calif.
Burgess Parr Co., Freeport, Ill.
Burklyn Co., The, 3429 Glendale Blvd., Los Angeles, Calif.

Burndy Engrg. Co., Inc., Boston Post Road and Richards Ave., Norwalk, Conn.
Butterfield Div., Union Twist Drill Co., Derby Line, Vt.

C

C. B. Tool Co., Box 94, Lancaster, Pa.
C B C Welding Corp., 422 E. 102nd St., New York 29, N. Y.
C-O Two Fire Equip. Co., P. O. Box 390, U. S. Highway 1, Newark 1, N. J.
Cabot, Samuel, Inc., 151 Milk St., Boston 9, Mass.
Caddy Arc Welding Accessory Div., Erico Products, Inc., 2070 E. 61st Place, Cleveland 3, Ohio
Calder Mfg. Co., 630 N. Prince St., Lancaster, Pa.
Calf-Teria Sales Inc., 1125 Polk St., Ft. Wayne 7, Ind.
California Air Products, Huntington Park, Los Angeles, Calif.
California Oxygen Co., Box 37 Town & Country Branch, Sacramento 21, Cal.
Cam-Lok Div., Empire Prod. Inc., P.O. Box 98, Cincinnati 36, Ohio
Cambell Machine Div. of American Chain & Cable Co., Inc., 929 Connecticut Ave., Bridgeport 2, Conn.
Campbell, J. A., Co., 645 E. Wardlow Rd., Long Beach 7, Calif.
Canadian Radium & Uranium Corp., 630 5th Ave., New York 20, N. Y.
Candee-Smith Governors, 2641 S. Hill St., Los Angeles 7, Calif.
Candor Glove Co., W. McCarthy St., Candor, N. Y.
Canton Alloys, Inc., 2154 Bolivar Road, S.W., Canton 6, Ohio
Capewell Mfg. Co., 60 Governor St., Hartford 2, Conn.
Carbide & Carbon Chemicals Div., Carbide & Carbon Corp., 30 E. 42nd St., N. Y. 17, N. Y.
Carboloy Department, General Electric Co., 11177 E. Eight Mile Road, Detroit 32, Mich.
Carborundum Co., The, Buffalo Ave., Niagara Falls, N. Y.
Card, S. W., Mfg. Co., Div. of Union Twist Drill Co., Rumford Ave., Mansfield, Mass.
Cardinal Machine Co., 109 S. Jackson St., Glendale 5, Calif.
Carey, Philip, Mfg. Co., Lockland, Cincinnati 15, Ohio.
Carhoff Co., 9321 Buckeye Rd., Cleveland 4, Ohio.
Carlson & Sullivan, Inc., 1617 S. California Ave., Monrovia, Calif.
Carnegie-Illinois Steel Corp., 434 Fifth Ave., Carnegie Bldg., Pittsburgh 30, Pa.
Carpenter Products, Inc., 85 Washburn St., Bridgeport, Conn.
Carpenter Steel Co., The, Front & Bern Sts., Reading, Pa.
Carson-Newton Co., 61-71 Mill St., Belleville 9, N. J.
Cash, A. W., Valve Mfg. Corp., Wabash & Morgan Sts., Decatur, Ill.
Castaloy Corp., 197 S. Waterman, Detroit 17, Mich.
Castle, A. M. & Co., 1132 W. Blackhawk St., Chicago 22, Ill.
Cauhorn Mfg. Co., 9999 Broadstreet, Detroit 4, Mich.
Cayuga Machine & Fabricating Co., Depew-Buffalo, N. Y.
Central Sales Corp., 20 North Wacker Dr., Chicago 6, Ill.
Central Steel & Wire Co., 3000 W. 51st St., Chicago 32, Ill.
Chain Belt Co., 1600 W. Bruce St., Milwaukee 4, Wis.
Challenge Machinery Co., The, Grand Haven, Mich.
Champion Blower & Forge Co., Charlotte St. & Harrisburgh Pike, Lancaster, Pa.
Champion DeArment Tool Co., S. Main St., Meadville, Pa.
Champion Lamp Works, 600 Broad St., Lynn, Mass.
Champion Pneumatic Machinery Co., 8156 S. Chicago Ave., Chicago 17, Ill.
Champion Rivet Co., The, Harvard & E. 108th St., Cleveland 5, Ohio.
Chanite Sales Co., 321 Arizona Ave., Fort Worth 3, Tex.
Chappel, L. H. & Co., 1137 Post Rd., Fairfield, Conn.
Chase Brass & Copper Co., 236 Grand St., Waterbury 20, Conn.
Chek-Shock Mfg. Co., Fowler, Calif.
Chelsea Fan & Blower Co., Inc., 639 South Ave., Plainfield, N. J.
Chemical Research Associates, 333 N. Michigan Ave., Chicago, Ill.
Chemical Publishing Co., Inc., 26 Court St., Brooklyn 2, N. Y.
Chester Hoist Div., The National Screw & Mfg. Co., P.O. Box 362, Lisbon, Ohio.
Chicago Blower Corp., 9867 Pacific Ave., Franklin Park, Ill.
Chicago Boiler Co., 1965 Clybourn Ave., Chicago 14, Ill.
Chicago Bridge & Iron Co., 332 S. Michigan Ave., Chicago, Ill.
Chicago Eye Shield Co., 2300 Warren Blvd., Chicago 12, Ill.
Chicago Hardware Foundry Co., 2500 Commonwealth Ave., N. Chicago, Ill.
Chicago Latrobe Twist Drill Works, 411 W. Ontario St., Chicago 10, Ill.
Chicago Mfg. & Dist. Co., 1928 W. 46th St., Chicago 9, Ill.
Chicago Pneumatic Tool Co., 6 E. 44th St., New York 17, N. Y.
Chicago Rawhide Mfg. Co., 1286 Elston Ave., Chicago 22, Ill.
Chicago Rubber Co., 2620 N. Clybourn Ave., Chicago, Ill.
Chicago Steel & Wire Co., 10257 S. Torrence Ave., Chicago 17, Ill.
Chicago Tool and Engrg. Co., 8383 S. Chicago Ave., Chicago 17, Ill.
Chicago Welding Sales Co., 3349 W. Ogden Ave., Chicago 23, Ill.
Chicago Wheel & Mfg. Co., 1101 W. Monroe St., Chicago 7, Ill.
Chisholm-Moore Hoist Corp., Fremont Ave., Tonawanda, N. Y.
Chrysler Corp., Third Natl. Bank Bldg., Dayton 2, Ohio.
Cia. Productora De Oxigeno, S. A., Apartado 318, 5 De Mayo 1175 Pte. Monterrey, N.L., Mexico.
Cinch Mfg. Corp., Howard B. Jones Div., 2460 W. George St., Chicago 18, Ill.
Cincinnati Elec. Tool Co., Madison & Edwards Rd., Cincinnati 8, Ohio.
Cincinnati Tool Co., 1944 Waverly Ave., Cincinnati 12, Ohio.
Cincinnati Milling Machine Co., The Cincinnati Grinders Inc., 4701 Marburg Ave., Cincinnati 9, Ohio.
Cirod Distributing Co., 7950 W. 47th St., Lyons, Ill.
City Tank Corp., 53-09 97th Pl., Corona, L. I., N. Y.
Clerage Fan Co., N. & Porter Sts., Kalamazoo 16, Mich.
Clare, C. P. & Co., 4719 W. Sunnyside Ave., Chicago 30, Ill.
Clark, Robert H. Co., 9330 Santa Monica Blvd., Beverly Hills, Calif.
Clark Controller Co., The, 1146 E. 152nd St., Cleveland 10, Ohio.
Clark, James, Jr., Electric Co., 645 Bergman St., Louisville 3, Ky.
Clayton & Lambert Mfg. Co., 1701-1715 Dixie Highway, Louisville 10, Ky.
Clayton-Sherman Abrasives Co., 3896 Lonyo Rd., Detroit 10, Mich.
Cleco Div., Reed Roller Bit Co., 5125 Clinton Drive, P.O. Box 2119, Houston 20, Texas.
Clements Mfg. Co., 6656 S. Narragansett Ave., Chicago 38, Ill.
Clemson Bros., Inc., 22 Cottage St., Middletown, N. Y.
Cleveland Chain & Mfg. Co., Broadway & Henry Sts., Cleveland 5, Ohio.
Cleveland Crane & Engrg. Co., Wickliffe, Ohio.
Cleveland Electric Motor Co., 5213 Chester Ave., Cleveland 3, Ohio.
Cleveland Precision Ring & Products Co., 4501 Prospect Ave., Cleveland 3, Ohio.
Cleveland Quarries Co., The, 1740 E. Twelfth St., Cleveland 14, Ohio.
Cleveland Tungsten, Inc., 10200 Meech Ave., Cleveland 5, Ohio.
Cleveland Twist Drill Co., The, 1242 E. 49th St., Cleveland 14, Ohio.
Clinch Mfg. Corp., 2460 W. George St., Chicago 18, Ill.
Clinton Machine Co., Warner Div., 21535 Grosebeck Highway, Detroit 5, Mich.
Clinton Prod. Co., 701 Tecumseh Rd., Clinton, Mich.
Clizbe Bros. Mfg. Co., W. Harrison St., Plymouth, Ind.
Clover Mfg. Co., 327 Main St., Norwalk, Conn.
Coast Metals, Inc., P.O. Box 7, Little Ferry, N. J.
Coast Pneumatic Tool Co., 1827 Elcerrito Place, Los Angeles 28, Calif.
Cobb, R. L., 56 Euclid Ave., Willoughby, Ohio.
Coffing Hoist Co., 800 Walters St., Danville, Ill.
Cogmatic Co., 1330 N. Franklin Pl., Milwaukee Wis.
Cogsdill Twist Drill Co., 12950 W. Eight Mile Road, Box 97, College Park Sta., Detroit 21, Mich.
Collins-Edmonds, Inc., 4041 Ridge Ave., Philadelphia, Pa.
Collmer Bros., 420 S. St. Joseph St., So. Bend 1, Ind.
Collyer Insulated Wire Co., Inc., 249 Roosevelt Ave., Pawtucket 1, R. I.
Colonial Abrasive Products Co., 6th & Harry Sts., Conshohocken, Pa.
Colonial Alloys Co., Ridge Ave. & Crawford Sts., Philadelphia 29, Pa.
Colonial Leather Co., 622 W. Oregon St., Milwaukee 4, Wisc.
Colorado Fuel & Iron Corp., Continental Oil Building, 1755 Glenarm Place, Denver 1, Colo.
Columbia Chemical Products Co., 553 Beaufait, Detroit 7, Mich.
Columbia Electric Mfg. Co., 4519 Hamilton Ave., Cleveland 14, Ohio.
Columbia Machinery & Engineering Corp., Hamilton, Ohio.
Columbia Steel Co., U. S. Steel Corp., Subsidiary, Russ Bldg., 235 Montgomery St., San Francisco 6, Calif.
Columbian Vise & Mfg. Co., 9021 Bessemer Ave., Cleveland 4, Ohio.
Columbus Anvil & Forging Co., 117 W. Frankfort St., Columbus 16, Ohio.
Columbus McKinnon Chain Corp., 120 Freemont St., Tonawanda, N. Y.
Combustion Control Corp., 77 Broadway, Cambridge 42, Mass.
Commercial Gas Corp., P. O. Box 348, 111 Scott St., Wilkes-Barre, Pa.
Commercial Shearing & Stamping Co., The, Youngstown, Ohio.
Commonwealth Prods., Co. de Mexico, S. A., Ave. Morelos No. 67, Mexico, D. G.
Compania Mexicana AGA, SA., Clavijero 40, Apartado Postal No. 1474, Mexico 1, D. F.
Compania Mexicana De Soldadura Autogena, S.A., Ave. Morelos No. 76-A, Apartado Postal 7295, Mexico, D.F.
Compressed Gas Cylinders, Inc., 2909 E. 54th St., Vernon, Calif.
Conco Engrg. Works, 50 West St., Mendota, Ill.
Conical Tool Co., 443 Division South, Grand Rapids 3, Mich.
Continental Gin Co., Industrial Div., Birmingham, Ala.
Continental Industrial Engineers' Co., Inc., 176 W. Adams St., Chicago 3, Ill.
Contour Marker Corp., 1843 E. Compton Blvd., Compton, Calif.
Cook's Adam, Sons, Inc., 5 Stiles St., Linden, N. J.
Cooley Electric Mfg. Corp., 38 S. Shelby St., Indianapolis 7, Ind.
Cooper Alloy Corp., Hillside 5, N. J.
Copco Eastern, P. O. Box 2568, Paterson, N. J.
Coppus Engineering Corp., 344 Park Ave., Worcester 2, Mass.
Cornell-DuBilier Electric Corp., Hamilton Blvd., South Plainfield, N. J.
Cornell Maritime Press, Cambridge, Md.
Corning Glass Works, Corning, N. Y.
Corpus Christi Oxygen Co., 2827 Agnes St., Corpus Christi, Texas.
Cortland Grinding Wheels Corp., 1 Huntington St., Chester, Mass.
Cortland Sales & Products, Inc., Pearl St., Cortland, Ohio.
Couse Manufacturing, Inc., 300 Passaic St., Newark 4, N. J.
Cowles Detergent Co., 7016 Euclid Ave., Cleveland 3, Ohio.
Coyne Cylinder Co., 200 Paul Ave., San Francisco 24, Calif.
Craftsweld Equip. Corp., 2626 Jackson Ave., Long Island City 1, N. Y.
Cramer, R. W., Co., Inc., 1941 Plant St., Centerbrook, Conn.
Crane Co., 836 S. Michigan Ave., Chicago 5, Ill.
Cratex Mfg. Co., 81 Natoma St., San Francisco 5, Calif.
Crescent Co., Inc., The, Carol Cable Div., Pawtucket, R. I.
Crescent Insulated Wire & Cable Co., Trenton, N. J.
Crescent Tool Co., 200 Harrison St., Jamestown 4, N. Y.
Crobalt, Inc., 2800 S. State St., Ann Arbor 1, Mich.
Crouse Hinds Co., Wolf & 7th N. St., Syracuse, N. Y.
Crucible Steel Co. of America, 405 Lexington Ave., New York, N. Y.
Cullen-Friestedt Co., 1300 S. Kilbourn Ave., Chicago 23, Ill.
Culver Glass Specialties, Inc., 28 St. Marks Place, New York 3, N. Y.
Cumming Tools, Inc., 501-03 E. 18th St., Kansas City 8, Mo.
Cummins-Chicago Corp., 4740 Ravenswood, Chicago 40, Ill.
Cuneo Press, Inc., 22nd, Canal & Grove Sts., Chicago 16, Ill.
Curtis Machine Co., Jamestown, N. Y.
Curtis Pneumatic Machinery Div. of Curtis Mfg. Co., 1905 Kienlen Ave., St. Louis 20, Mo.
Custonite Corp., Larchmont, N. Y.
Cut-O-Guide Sales Co., 1900 Euclid Ave., Cleveland 15, Ohio.
Cutler Hammer, Inc., 507 N. 12th St., Milwaukee 1, Wisc.
Cutter Machine Co., 3723 Commonwealth Ave., St. Louis 17, Mo.

D

D-V Welding Controls, 3959 Piedmont Ave., Oakland 11, Calif.
Dahlstrom Mfg. Co., 2520 West Larpenteur Ave., St. Paul 8, Minn.
Dalweld Co., 1 Bertel Ave., Mount Vernon, N. Y.
Damascus Steel Prods. Corp., 2215 Kiswaukee St., Rockford, Ill.
Daniels, C. R., Inc., 75 West St., New York, N. Y.
Danly Machine Spec., Inc., 2100 S. 52nd St., Chicago 50, Ill.
Darling Valve & Mfg. Co., Ft. of Walnut St., Williamsport, Pa.
Darwin & Milner, Inc., 1260 W. 4th St., Cleveland, Ohio
Davies & Son, Inc, 1416 Westwood Blvd., Los Angeles 24, Calif.
Davis Emergency Equip. Co., Inc., 45 Halleck St., Newark 4, N. J.
Davis Regulator Co., 2544 S. Washtenaw Ave., Chicago 8, Ill.
Dayton Chemical Products Laboratories, Inc., West Alexandria, Ohio.
Dayton Grinding Wheel Co., 1101 Negley Pl., Dayton, Ohio.
DeBothezat Fans Div., Amer. Machine & Metals, Inc., E. Moline, Ill.
Delta File Works, Inc., 4837 James St., Philadelphia 37, Pa.
Delta Oxygen Co., 611 Court Ave., Memphis 7, Tenn.
Delta Power Tool Div. of Rockwell Mfg. Co., 620 E. Vienna Ave., Milwaukee 1, Wis.
Delta Welder Corp., 8525 Livernois, Detroit 4, Mich.
Dennis Chemical Co., 2701 Papin St., St. Louis 3, Mo.

Denver Oxygen Co., Inc., 1160 10th St., Denver 1, Colo.
DeSanno, A. P. & Son, Inc., Wheatland St., Phoenixville, Pa.
Desmond Stephan Mfg. Co., 317 S. Walnut St., Urbana, Ohio.
Despatch Oven Co., 619 Eighth St., S. E., Minneapolis 14, Minn.
Detroit Electrode Holders Mfg. Co., 3437 Book Bldg., Detroit, Mich.
Detroit Electronic Products Co., 19929 Exeter Ave., Detroit 3, Mich.
Detroit First Aid Co., 6335 Grand River Ave., Detroit 8, Mich.
Detroit Hoist & Machine Co., 8300 Morrow St., Detroit 11, Mich.
Detroit Stamping Co., 372 Midland Ave., Detroit 3, Mich.
Detroit Surfacing Machine Co., 1333 East Eight Mile Road, Detroit 20, Mich.
Detroit Testing Machine Co., 9390 Grinnell Ave., Detroit 13, Mich.
Deutschman Corp., Canton, Mass.
DeVilbiss Co., 300 Phillips Ave., Toledo 1, Ohio.
DeWalt, Inc., Fountain Ave., Lancaster, Pa.
Diemalloy Co., The, P.O. Box 190, Gowanda, N. Y.
Diamond Alkali Co., Oliver Bldg., Pittsburgh 22, Pa.
Diamond Mechanical Goods, Div. of The B. F. Goodrich Co., 444 S. Main St., Akron, Ohio.
Diamond Saw Works, Inc., 265 Court St., Buffalo 2, N. Y.
Diamonite Products Div., The United States Ceramic Tile Co., 217 Fourth St., N.E., Canton, Ohio.
Dize, J. W., Co., 1 Eagle St., Englewood, N. J.
Dico Corp., 200 Southwest 16th St., Des Moines 5, Ill.
Diener, Geo. W., Mfg. Co., 400 Monticello Ave., Chicago 24, Ill.
Die Typing Corp., 419 Book Bldg., Detroit 26, Mich.
Dill Mfg. Co., 700 E. 82nd St., Cleveland 3, Ohio.
Dillon, W. C., & Co., Inc 14620 Keswick, Van Nuys, Calif.
Dings Magnetic Separator Co., 4740 W. Electric Ave., Milwaukee 14, Wis.
Disston, Henry & Sons, Inc., Unruh & Milnor Sts., Tacony, Phila. 35, Pa.
Diversey Corp., The Metal Industries Dept., 1820 W. Roscoe St., Chicago 13, Ill.
Divine Bros. Co., 200 Seward Ave., Utica 1, N. Y.
Division Lead Co., 7742 West 61st Place, Summit, Ill.
Dixon, Joseph, Crucible Co., 167 Wayne St., Jersey City 2, N. J.
Dixon Valve & Coupling Co., Hancock St. & Columbia Ave., Philadelphia 22, Pa.
DoAll Co., 245 N. Laurel Ave., DesPlaines, Ill.
Dockson Corp., 3867 Wabash Ave., Detroit 8, Mich.
Dodge Mfg. Corp., 500 S. Union St., Mishawaka, Ind.
Dollinger Corp., 11 Centre Park, Rochester 3, N. Y.
Dolph, John C., Co., 1060 Broad St., Newark 2, N. J.
Dominion Bridge Co., Ltd., P. O. Box 280, Lachine (Montreal), Quebec, Canada.
Donnelley, R. R., & Sons, 350 E. Cermak, Chicago 16, Ill.
Douglas Pipe Machine Co., 412 South California St., Monrovia, Calif.
Dow Chemical Co., 1014 Jefferson Ave., Midland, Mich.
Downs Crane & Hoist Co., The, 540 W. Vernon Ave., Los Angeles 37, Calif.
Drake, Frederick J., & Co., 117 Green Bay, Wilmett, Ill.
Drawalloy Corp., Lincoln Hway West at Alloy St., York, Pa.
Dremel Mfg. Co., 2420 18th St., Racine, Wis.
Drennen, Lee J., Inc., 430 W. Main St., Arcade, N. Y.
Dresser Industries, Inc., Terminal Tower, Cleveland 13, Ohio.
Dresser Mfg. Div., 51 Fisher Ave., Bradford, Pa.
Driver-Harris Co., Harrison, N. J.
Dudgeon, Richard, Inc., 24 Columbia St., New York 2, N. Y.
Duff Norton Mfg. Co., The, 2709 Preble Ave., Pittsburgh 30, Pa.
Dumore Co., 1300 Seventeenth St., Racine Wis.
du Mont Corp., The, Greenfield, Mass.
Dunn Products, 1216 W. Madison St., Chicago, Ill.
du Pont de Nemours, E. I. & Co., Inc., Grasselli Chemicals Dept., Wilmington 98, Del.
du Pont de Nemours, E. I. & Co., Inc., Wilmington 98, Del.
du Pont de Nemours, E. I. & Co., Inc., Pattern Screen Div., Towanda, Pa.
du Pont de Nemours, E. I. & Co., Inc., Photo Products Dept. Wilmington 98, Del.
Duquesne Electric & Mfg. Co., Pittsburgh 6, Pa.
Dur-a-Blit Products, Inc., Box 1, Sussex, Wis.
Duracote Corp., Ravenna, Ohio
Durbin Durco, 6611 Oliver St. Rd., St. Louis 5, Mo.
Duro-Dyne Corp., 800 Third Ave., New Hyde Park, N. Y.
Duro Engineering Co., 41 Oregon Ave., Hamden, Conn.
Duro Metal Products Co., 2649 N. Kildare Ave., Chicago 39, Ill.
Dye Oxygen Co., Inc., P. O. Box 6276, Phoenix, Ariz.
Dymonhard Corp., 250 W. 57th St., New York 19, N. Y.

E

Eagle Mfg. Co., 24th & Charles St., Wellsburg, W. Va.
Eagle Picher Co., The, American Bldg., Cincinnati 1, Ohio.
Eagle Welding Equipment Co., 5085 Broadway, Chicago 40, Ill.
Eastern Equipment Co., Inc., 44 Terwood Road, P.O. Box 897, Willow Grove, Pa.
Eastern Safety Equipment Co., The, 27-06 43rd Ave., L. I., N. Y.
Eastern Stainless Steel Corp., Box 1975, Baltimore 3, Md.
Eastern Tool & Mfg. Co., 1 Montgomery St., Belleville 9, N. J.
Eastman Kodak Co., 343 State St., Rochester 4, N. Y.
Eaton Mfg. Co., Wilcox Rich Div., Detroit, Mich.
Eccles & Davies Machinery Co., Inc., 1910 Sante Fe Ave., Los Angeles 21, Calif.
ECCO High Frequency Corp., 7020 Hudson Blvd., North Bergen, N. J.
Eclipse Fuel Engineering Co., 711 S. Main St., Rockford, Ill.
Edward Valves, Inc., 1200 W. 145th St., East Chicago, Ind.
Ehret Magnesia Mfg. Co., Valley Forge, Pa.
Eisler Engrg. Co., Inc., 738-758 South 13th St., Newark 3, N. J.
Eitel-McCullough, Inc., 1670 San Mateo Ave., San Bruno, Calif.
Elastic Stop Nut Corp. of Amer., Union, N. J.
Electric Arc, Inc., 152-62 Jelliff Ave., Newark 8, N. J.
Electric Auto-Lite Co., Champlain-Mulberry Sts., Toledo 1, Ohio.
Electric Blower Co., 352 Atlantic Ave., Boston 10, Mass.
Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland 4, Ohio.
Electrical Industries, Div. Amperex Electronic Corp., 44 Summer Ave., Newark 4, N. J.
Electric Hose & Rubber Co., 12th & Dure Sts., Wilmington 99, Del.
Electric Machinery Mfg. Co., 1331 Tyler St., N. E., Minneapolis 13, Minn.
Electric Soldering Iron Co., Inc., W. Elm St., Deep River, Conn.
Electric Storage Battery Co., The, 19th St. & Allegheny Ave., Philadelphia 32, Pa.
Electric Welding Machine Co., 9635 French Rd., Detroit, Mich.
Electron-Arc, Inc., 210 Broad St., Lynn, Mass.
Electro Cover Glass Co., Inc., 110—18th St., Sharpsburg Br., Pittsburgh 15, Pa.
Electro Refractories & Abrasives Co., 344 Delaware Ave., Buffalo 2, N. Y.
Electrocircuits, Inc., 401 E. Green St., Pasadena 1, Calif.
Electroloy Co., Inc., The, 1600 Seaview Ave., Bridgeport 8, Conn.
Electrons, Inc., 127 Sussex Ave., Newark 4, N. J.
Elematic Equip. Corp., 6731-A S. Chicago Ave., Chicago 37, Ill.
Elliott Glove Co., Inc., 127 Huron Ave., Oconto, Wis.
Elliott Mfg. Co., 350 State St., Binghamton, N. Y.
Ellwood Products Corp., Ellwood City, Pa.
Emerson Elec. Mfg. Co., 8100 Florissant Ave., St. Louis 21, Mo.
Engwald Corp., 357 Lafayette Ave., Brooklyn 38, N. Y.
Ergolyte Mfg. Co., 3626 N. Lawrence St., Philadelphia 40, Pa.
Erico Products, Inc., 2070 E. 61st Place, Cleveland, Ohio.
Essex Brass Corp., 2000 Franklin St., Detroit 7, Mich.
Eutectic Welding Alloys Corp., 172 St. & Northern Blvd., Flushing 58, N. Y.
Evanston Equipment Co., 33 Warren St., Newark 2, N. J.
Ever-Tite Alloy Corp., 1-3 Bleeker St., New York, N. Y.
Ewald Instruments, 93 Nassau St., New York 38, N. Y.
Expert Welding Machine Co., 17144 Mt. Elliott St., Detroit 12, Mich.

F

Fairbanks-Morse & Co., 610 S. Michigan Ave., Chicago 5, Ill.
Fairmont Tool & Forging Co., 10611 Quincy Ave., Cleveland, Ohio.
Falcon Equipment Co., 13th St., New Brighton, Pa.
Famco Machine Co., 1336 18th St., Racine, Wis.
Fansteel Metallurgical Corp., 2200 Sheridan Rd., North Chicago, Ill.
Far-Ex Corp., 75 West St., New York, N. Y.
Farrelloy Co., 1243-45 N. 26th St., Phila. 21, Pa.
Ferris Engineering Co., 400 Commercial Ave., Palisades Park, N. J.
Faulk, F. R., Equipment Sales, 13 Wabash Ave., Pittsburgh 20, Pa.
Fauver, J. N., Co., Inc., 49 W. Hancock Ave., Detroit 1, Mich.
Federal Electric Prods. Co., 50 Paris St., Newark 5, N. J.
Federal Machine & Welder Co., The, Overland Ave., Warren, Ohio.
Federal Telephone & Radio Corp., 100 Kingsland Road, Clifton, N. J.
Federal Tool Engineering Co., 1384 Pompton Ave., Cedar Grove, N. J.
Fendall Co., 4631 Northwestern Ave., Chicago 25, Ill.
Fenway Machine Co., 263 N. 23rd St., Philadelphia 3, Penn.
Ferrara, Inc., 8106 W. Nine Mile Rd., Oak Park 37, Mich.
Ferguson Machine & Tool Co., Roller Gear Div., P. O. Box 191, St. Louis 21, Mo.
Fibre Abrasive Corp., 1129 E. 74th St., Chicago 19, Ill.
Fibre-Metal Prod. Co., The, 5th & Tilghman Sts., Chester, Pa.
FIM Inc., 170 Fifth Ave., New York 10, N. Y.
Fire Gun Sales Corp., 2500 W. 7th Ave., Denver 4, Colo.
Firth Sterling, Inc., 3113 Forbes St., Pittsburgh 30, Pa.
Fish-Schurman Corp., 230 E. 45th St., N. Y. 17, N. Y.
Fisher & Norris (Eagle Anvil Wks), 37-45 Bloomsbury St., Trenton 1, N. J.
Flame Cutting Equipment Co., Box 455, Dania, Fla.
Flexaust Co., 100 Park Ave., New York, N. Y.
Flexonics Corp., 1315 S. Third Ave., Maywood, Ill.
Flint Products Co., 2925 Ave. H., Brooklyn 10, N. Y.
Flood Safety Prod. Co., 3035 W. Lake St., Chicago 12, Ill.
Flux-All Chemical Products, 4018 10th Ave., New York 34, N. Y.
Foley Mfg. Co., 3300 Fifth St., N. E., Minneapolis 18, Minn.
Ford, M. A., Mfg. Co., Inc., 732 W. River St., Davenport, Iowa
Foote Mineral Co., 18 W. Chelten Ave., Philadelphia 44, Pa.
Ford, J. B., Wyandotte, Mich.
Ford Chain Block Div. of America Chain & Cable Co., Inc., 1100 E. Princess St., York, Pa.
Foredom Electric Co., 27 Park Place, New York 7, N. Y.
Forney Mfg. Co., 1800 La Porte Ave., Fort Collins, Colorado
Foster Alum. Alloy Prod. Corp., 45 Pearl St., Forestville 13, N. Y.
Foster Transformer Co., 3820 Colerain Ave., Cincinnati 23, Ohio.
Fox Grinders, Inc., Oliver Bldg., Pittsburgh, Pa.
Franklin Transformer Mfg. Co., 65 22nd Ave., N.E., Minneapolis 18, Minn.
Frederick Gumm Co., Kearney, N. J.
Friez Instrument Div. of Bendix Aviation Corp., Taylor Ave. & Lock Haven Blvd., Baltimore 4, Md.
Frommelt Industries, P. O. Box 165, Dubuque, Iowa
Frostrode Div. of Viking Products, 3066 E. Outer Drive, Detroit 34, Mich.
Fruehauf Trailer Co., 10940 Harper Ave., Detroit 32, Mich.
Fuller, G. C., Mfg. Co., 1621 Central Ave., Cincinnati 14, Ohio.
Fusion Engineering, 4504 Superior Ave., Cleveland 3, Ohio.

G

Gallup Ruffing Handle Co., St. Mary's St., Norwalk, Ohio.
Galland-Henning Mfg. Co., 2741 S. 31st St., Milwaukee 46, Wis.
Galv-Weld Products, 324 East Second St., Dayton, Ohio.
Gamma Corp., The, Mansfield, Mass.
Gar-Bro. Mfg. Co., 2416 E. 16th St., Los Angeles 21, Calif.
Garden City Industries, Inc., 900 W. Jackson Blvd., Chicago, Ill.
Gardner Denver Co., Quincy, Ill.
Garibay Mfg. Co., 1517 Colegrove Ave., Montebello, Calif.
Garrett, George K., Co., Inc., Tioga & D Sts., Philadelphia 34, Pa.
Gas Appliance Service, Inc., 1211 Webster Ave., Chicago 14, Ill.
Gas Arc Supply, 223-25 N. 16th St., Philadelphia 2, Pa.
Gases Industriales, S.A., Apartado Postal Numero 295, San Luis, Potosi, S.L.P., Mexico.
Gasflux Co., The, 198 Wayne St., Mansfield, Ohio.
Geso Equipment Co., 3253 N. Kedzie Ave., Chicago 18, Ill.
Gaspro, Ltd., P. O. Box 2454, Honolulu 4, T. H.
Gaston Power Tools, Inc., 14829 Loomis St., Harvey, Ill.
Gasweld Equipt. Co., 3100 S. Kedzie, Chicago, Ill.
Gates Rubber Co., The, 999 S. Broadway, Denver 17, Colorado.
Gellid Engineering Corp., 20 Lake St., Oak Park, Ill.
Gem Mfg. Co., 1229-1243 Goebel St., Pittsburgh 12, Pa.
General Aniline & Film Co., Ansco Div., Binghamton, N. Y.
General Blower Co., 8608 Ferris Ave., Morton Grove, Ill.
General Cable Corp., 420 Lexington Ave., New York 17, N. Y.
General Ceramics Corp., Chemical Equipment Div., Keasbey, N. J.
General Detroit Corp., 2272 E. Jefferson Ave., Detroit 7, Mich.
General Electric Co., 1 River Rd., Schenectady 5, N. Y.
General Electric Co., Welding Dept., York, Pa.
General Electric Co., 4855 Electric Ave., Milwaukee, Wis.
General Pacific Corp., 1800 S. Hooper Ave., Los Angeles 21, Calif.
General Propane Gas Corp., 189 Third St., Mineola, N. Y.
General Refractories Co., 1600 Real Estate Bldg., Philadelphia 7, Pa.

General Scientific Equip. Co., 27th & Huntingdon Sts., Philadelphia 32, Pa.
General Welding & Equip. Co., 268 Northampton St., Boston 18, Mass.
General Welding Corp., 7404 Euclid Ave., Cleveland 3, Ohio.
Generant Engineering Co., 260 S. 20th St., Newark 3, N. J.
Genter, C. D. & Co., 2109 Broad St., Chattanooga, Tenn.
Georator Corp., Manassas, Va.
Gleason Corp., 3043 N. 30th St., Milwaukee 10, Wisc.
Glendale Optical Co., Inc., Chettic & Garfield Ave.'s, Copiague, N. Y.
Glenn Co., 3134 E. 10th St., Oakland 1, Calif.
Glenn-Roberts Co., 2107 Adams St., Indianapolis 18, Ind.
Globe Steel Tubes Co., 3839 West Burnham St., Milwaukee 4, Wisc.
Goggle Parts Co., The, Cleveland, Ohio.
Golden Rod Equip. Co., 617 Montgomery St., San Francisco 11, Calif.
Goldsmith Bros. Smelting & Refining Co., 1300 W. 59 St., Chicago 36, Ill.
Goodall Rubber Co., Whitehead Rd., Trenton 4, N. J.
Goodell Pratt Co., Div. of Millers Falls Co., 57 Wells St., Greenfield, Mass.
Goodheart-Willcox Co., 1321 S. Michigan Ave., Chicago 5, Ill.
Goodrich, B. F., Co., 500 S. Main St., Akron 11, Ohio.
Goodrich Welding Equipment Corp., Hudsonville, Mich.
Goodyear Tire & Rubber Co., Inc., 1144 E. Market St., Akron 16, Ohio.
Gordon, Claud S., Co., 3000 S. Wallace St., Chicago 16, Ill.
Gorham Tool Co., 1440 Woodrow Wilson St., Detroit, Mich.
Goss Gas, Inc., Route No. 8, Glenshaw, Pa.
Gouran, Mark F., Inc., 7309 Boyer St., Phila. 19, Pa.
Graham Mfg. Corp., 1541 E. Eight Mile Rd., Ferndale 20, Mich.
Graham Rotary File & Tool Corp., 4816 Tacony St., Philadelphia 37, Pa.
Grand Specialties Co., 3101 West Grand Ave., Chicago 22, Ill.
Granite City Steel Co., 20th and Madison Ave., Granite City, Ill.
Gray Co., Inc., 60 11th Ave., N. E., Minneapolis 13, Minn.
Gray Mills Corp., 2006 Ridge Ave., Evanston, Ill.
Great Lakes Steel Corp., Alloy Div., Ecorse, Detroit 18, Mich.
Great Lakes Steel Corp., Tecumseh Rd., Ecorse, Detroit 18, Mich.
Greene, Tweed & Co., 318 Elm Ave., North Wales, Pa.
Greenfield Tap & Die Corp., Sanderson St., Greenfield, Mass.
Greenlee Tool Co., Div. of Greenlee Bros. & Co., 2136 Twelfth St., Rockford, Ill.
Greyhound A. C. Arc Welder Corp., 604 Johnson Ave., Brooklyn 6, N. Y.
Grieve-Hendry Co., Inc., 1815 West Lake Street, Chicago 12, Ill.
Griffin, G. W., Co., 93 Memorial St., Franklin, N. H.
Grinnell Co., Inc., 260 W. Exchange St., Providence 1, R. I.
Grip Nut Company, 310 S. Michigan Ave., Chicago 4, Ill.
Griscom-Russell Co., 285 Madison Ave., New York, N. Y.
Grobet File Co. of America, Inc., 421 Canal St., New York 13, N. Y.
Gulf Oxygen Co., Inc., 312 N. Kirkman St., Lake Charles, La.
Gulf Steel & Wire Co., Grant Bldg., Pittsburgh, Pa.
Gumm, Frederick, Chemical Co., Inc., 538 Forest St., Kearney, N. J.
Guyan Machinery Co., Box 150, Logan, W. Va.

H

H & M Pipe Beveling Machine Co., 311 East Third St., Tulsa, Okla.
Haas Miller Corp., Fourth & Bristol Streets, Philadelphia 40, Pa.
Hallwell Tool Co., 606 S. Hill St., Los Angeles 14, Calif.
Hamilton, Alexander Inst., 71 W. 23rd St., New York 10, N. Y.
Hamilton Tool Co., 9th & Hanover Sts., Hamilton, Ohio.
Hammett Elec. Mfg. Co., 706 E. 18th St., Kansas City 8, Mo.
Hammer Blow Tool Co., 602½ Third St., P.O. Box 419, Wausau, Wis.
Hammond Associates Inc., The, Suite 3022, Empire State Bldg., N. Y. 1, N. Y.
Hammond Machinery Builders Inc., 1600 Douglas Ave., Kalamazoo, Mich.
Hancock Valve Div., Manning Maxwell & Moore Inc., Bridgeport, Conn.
Handy & Harman, 82 Fulton St., New York 38, N. Y.
Hanna Engineering Works, 1765 North Elston Ave., Chicago 22, Ill.
Hannifin Corp., Des Plaines, Ill.
Hanover Glove Co., 2-6 Exchange Pl., Hanover, Pa.
Hansen, S. A., Co., 58 Frelinghuysen Ave., Newark 5, N. J.
Hanson-Van Winkle-Munning Co., Matawan, N. J.
Harbison Walker Refractories Co., 1800 Farmers Bank Bldg., Pittsburgh, Pa.
Harmo Tire & Rubber Corp., 518 Hammond Bldg., Detroit 26, Mich.
Harmon & Co., 919 N. Michigan Ave., Chicago, Ill.
Harnischfeger Corp., 4400 W. National Avenue, Milwaukee 46, Wis.
Harrington Co., The, 17th & Callowhill Sts., Philadelphia 30, Pa.
Harris Calorific Co., 5501 Cass Ave., Cleveland 2, Ohio.
Harrisburg Steel Corp., 10th & Herr Sts., Harrisburg 15, Pa.
Harris Welding Equip. Co., 518 North Bishop St., Chicago 22, Ill.
Harvey Aluminum Co., Torrance, Calif.
Har-Worth Mfg. Co., 744 Broad St., Newark 2, N. J.
Haskins, R. G. Co., 2651 West Harrison St., Chicago 12, Ill.
Hauck Mfg. Co., 124-136 10th St., Brooklyn 15, N. Y.
Hayes, C. I., Inc., 75 Baker St., Providence 5, R. I.
Hayes Truck Appliance Co., Richmond, Ind.
Haynes Stellite Co., A Div. of Union Carbide & Carbon Corp., So. Lindsay St., Kokomo, Ind.
Hays Mfg. Co., 12th & Liberty Streets, Erie 6, Pa.
Hazard Insulated Wire Works Div. of the Okonite Co., 72 Hazle St., Wilkes Barre, Pa.
Hazard Wire Rope Div. of American Chain & Cable Co., Inc., 271 S. Pennsylvania Ave., Wilkes Barre, Pa.
Heath Engineering Co., 209 Jefferson St., Ft. Collins, Colo.
Hebard, W. F. & Co., 623 S. Winchester, Chicago, Ill.
Heller Brothers Co., 865 Mt. Prospect Ave., Newark 4, N. J.
Helub Industries, Inc., Sycamore, Ill.
Henley, Norman W., Publishing Co., 2 W. 45th St., New York 19, N. Y.
Herbrand Tools, Stone & Lake Sts., Fremont, Ohio
Hercules Chemical Co., Inc., 332 Canal St., New York 13, N. Y.
Herrick, C. B. Mfg. Corp., 2000 Center St., Cleveland, Ohio
Heston & Anderson, 608 W. Kirkwood St., Fairfield, Iowa
Hewitt-Robins, Inc., 666 Glenbrook Road, Stamford, Conn.
Hevi Duty Elec. Co., 4212 W. Highland Blvd., Milwaukee 1, Wis.
Hewlett Packard Co., 367 Addison Ave., Palo Alto, Calif.
Hexacon Electric Co., 161 W. Clay Ave., Roselle Park, N. J.
High Voltage Engineering Corp., 7 University Rd., Cambridge 8, Mass.
Hi-Lo Mfg. Co., Inc., 18525 Weaver Ave., Detroit 23, Mich.
Hirst Electronic Develop., Ltd., Dermody Rd., Lewisham, London S.E., England
Hisey-Wolf Machine Co., Madison & Edwards Rd., Cincinnati 8, Ohio.
Hobart Brothers Co., Hobart Sq., Troy 1, Ohio.
Hoeganaes Sponge Iron Corp., Riverton, N. J.
Hoffman, Robert W., Co., Inc., 32-36 S. Clinton St., Chicago 6, Ill.
Hoke Inc., 148 S. Dean St. Englewood, N. J.
Holcomb Safety Garment Co., 128 N. Jefferson St., Chicago 2, Ill.
Holcroft & Co., 6545 Epworth Blvd., Detroit 10, Mich.
Holden, A. F., Co., 11300 Schaefer Highway, Detroit 27, Mich.
Holger Andreasen, Inc., 703 Market St., San Francisco 3, Calif.
Hollands Mfg. Co., 350 E. 18th St., Erie, Pa.
Hollingshead, R. M., Corp., 840 Cooper St., Camden, N. J.
Holmes, Robert, & Bros., Inc., 510 Junction Ave., Danville, Ill.
Holth Mfg. Co., Port Huron, Mich.
Homalite Corp., The, 11-13 Brookside Dr., Wilmington, Del.
Home Rubber Co., 30 Wolverton Ave., Trenton 5, N. J.
Hones, Charles A., Inc., 121 S. Grand Ave., Baldwin, L. I., N. Y.
Hoof Products Co., 6543 S. Laramie Ave., Chicago 38, Ill.
Hope Natural Gas Co., 445 W. Main St., Clarksburg, W. Va.
Hose Accessories Co., 17th & Lehigh Ave., Philadelphia 32, Pa.
Hoskins Mfg. Co., 4445 Lawton Ave., Detroit 8, Mich.
Hossfeld Mfg. Co., 446 W. 3rd St., Winona, Minn.
Houghton, E. F., & Co., 303 W. Lehigh Ave., Phila. 33, Pa.
Houston Oxygen Co., Inc., 3602 W. 11 St., Houston 8, Texas.
Hughes, M. W., Co., Watertown, Mass.
Hunt, C. B. & Son, Inc., 1900 E. Pershing St., Salem, Ohio.
Hunt, Robert W., Co., 59 Murray St., N. Y. 7, N. Y.
Hurbenium Co., Napoleon, Ohio.
Hydraulic Press Mfg. Co., The, Marion Rd., Mt. Gilead, Ohio.

I

Idaho Sprocket Machine Works, Inc., The, Boise, Idaho.
Ideal Electric & Mfg. Co., Mansfield, Ohio.
Ideal Industries, Inc., 1935 Park Ave., Sycamore, Ill.
Ilg, Electric Ventilating Co., 2850 N. Crawford Ave., Chicago 41, Ill.
Illinois Iron & Bolt Co., 10 Main St., Carpentersville, Ill.
The Illium Corp., P. O. Box 478, Freeport, Ill.
Imperial Brass Mfg. Co., The, 1200 W. Harrison St., Chicago 7, Ill.
Imperial Glove Co., 285 S. W. Franklin St., Berlin, Wis.
Independent Engrg. Co., Inc., O'Fallon, Ill.
Indiana Oxygen Co., 435 S. Deleware St., Indianapolis 25, Ind.
Indianapolis Brush & Broom Mfg. Co., Corner Brush & Broom St., Indianapolis 7, Ind.
Induction Heating Corp., 181 Wythe Ave., Brooklyn 11, N. Y.
Industrial Air Products Co., 3200 N.W. Yeon Ave., Portland 10, Ore.
Industrial Bench & Equip. Mfg. Co., Inc., 98 South St., New Britain, Conn.
Industrial Corp., Baltimore Life Bldg., Baltimore 1, Md.
Industrial Engr., 4268 Shenandoah Ave., St. Louis 10, Mo.
Industrial Equip. Co., 315 N. Ada St., Chicago 7, Ill.
Industrial Gloves Co., 700 Garfield St., Danville, Ill.
Industrial Metal Protectives, Inc., 401 Homestead Ave., Dayton 8, Ohio
Industrial Overlay Metals, Inc., 410 N. Barron St., Eaton, Ohio.
Industrial Press, The, 148 Lafayette St., N. Y. 13, N. Y.
Industrial Products Co., 2802 N. Fourth St., Philadelphia 33, Pa.
Industrial Timer Corp., 115 Edison Pl., Newark 5, N. J.
Ingersoll-Rand Co., 11 Broadway, N. Y. 4, N. Y.
Ingersoll Steel Div., Borg-Warner Corp., 310 S. Michigan Ave., Chicago 4, Ill.
Inland Oxy-Acetylene Co., Inc., 218 E. Trent Ave., Portland 10, Oregon.
Inland Steel Co., 38 S. Dearborn St., Chicago 3, Ill.
Innis, Speiden & Co., 117 Liberty St., New York, N. Y.
Insta-Gas Corp., 1977 E. Woodbridge St., Detroit 7, Mich.
Insulrock Corp., East Linden Ave., Linden, N. J.
International Chain & Mfg. Co., York, Pa.
International Nickel Co., Inc., The, 67 Wall St., N. Y. 5, N. Y.
International Rectifier Corp., 1521 E. Grand Ave., El Segundo, Calif.
International Salt Co., Inc., Scranton Life Bldg., Scranton 3, Pa.
International Shoe Co., Hy-Test Div., 1509 Washington St., St. Louis 3, Mo.
International Textbook Co., 1001 Wyoming Ave., Scranton 9, Pa.
Interstate Machinery Co., 1431 W. Pershing Rd., Chicago 9, Ill.
Interstate Sales Co., 123 E. 18th St., New York 3, N. Y.
Invincible Vacuum Cleaner Mfg. Co., 3000 Davis St. S. Dover, Ohio.
Iron Lung Ventilator Co., 4019 Prospect Ave., Cleveland 3, Ohio.

J

Jackson Products, 31739 Mound Rd., Warren, Mich.
J & H Products Co., 3007 Elm St., Dallas, Tex.
J & S Tool Co., Inc., 1104 Route 10, Livingston, N. J.
Janos Asbestos Co., 39 Cortlandt St., New York 7, N. Y.
Jarvis, Charles L., Co., Pease Ave. & Stack St., Middletown, Conn.
Jefferson Engineering & Mfg. Co., 269 Walker St., Detroit 7, Mich.
Jefferson Mfg. Co., The, 800 N. 4th St., Columbus 16, Ohio.
Jenkins Bros., 80 White St., New York, N. Y.
Jergens Tool Specialty Co., 712 E. 163rd St., Cleveland 10, Ohio.
Jessop Steel Co., 500 Green St., Washington, Pa.
Jewel Mfg. Co., 1841 University Ave., St. Paul 4, Minn.
Johns-Manville Corp., 22 E. 40th St., New York 16, N. Y.
Johnson Bronze Co., 535 S. Mill St., New Castle, Pa.
Johnson Gas Appliance Co., 520 E. Ave., N. W., Cedar Rapids, Iowa.
Johnson Machine Works, Eau Claire, Wis.
Johnson Mfg. Co., Inc., Mt. Vernon, Iowa.
Johnson Mfg. Corp., 1013 Barnes St., Albion, Mich.
Johnson Mfg. Corp., 405 Lexington Ave., New York 17, N. Y.
Johnson Steel & Wire Co., Inc., 55 Wiser Ave., Worcester 7, Mass.
Johnston, A. P., 1845 E. 57th St., Los Angeles 11, Calif.
Jones Engineering Co., 523 Spring St., Ellwood City, Pa.
Jones, C. Walker, Co., 6125 N. Lambert St., Phila. 38, Pa.
Jones, Howard B., Div., Cinch Mfg. Corp., 1026 S. Homan Ave., Chicago 24, Ill.
Jones, Jimmie, Co., 1016 E. 4th St., Tulsa, Okla.
Jones & Laughlin Steel Corp., Third Ave. & Ross St., Pittsburgh 30, Pa.
Jordan Electronic Sales, Inc., 119 E. Union St., Pasadena, Calif.
Joy Mfg. Co., Henry W., Oliver Bldg., Pittsburgh 22, Pa.

Joyce Cridland Co., The, 2027 First St., Dayton, Ohio.
Junkin Safety Appliance Co., Inc., 101 S. Floyd St., Louisville 2, Ky.
Justrite Mfg. Co., 2061 N. Southport Ave., Chicago 14, Ill.

K

KSM Products, Inc., Yale & Woodland Aves., Merchantville 8, N. J.
Kaiser Aluminum & Chemical Corp., 1924 Broadway, Oakland 12, Calif.
Kalamazoo Tank & Silo Co., Machine Tool Div., 508 Harrison St., Kalamazoo 16, Mich.
Kano Laboratories, 1000 S. Thompson Lane, Nashville, Tenn.
Kansas Oxygen, Inc., P.O. Box 551, 126½ N. Main St., Hutchinson, Kan.
Karma Mfg. Co., 14823 Loomis St., Harvey, Ill.
Kasson Die & Motor Corp., 32-14 Northern Blvd., Long Island City 1, N. Y.
Keasbey & Mattison Co., Ambler, Pa.
Keaton Mfg. Co., Sutler, Wis.
Kedman Co., 233 S. 5th W. St., Salt Lake City 1, Utah.
Keenan Welding Supplies Co., P. O. Box 44, Albany, Ga.
Kelite Products, Inc., P. O. Box 2917, Term. Annex, Los Angeles 54, Calif.
Keller Tool Co., 1333 Fulton St., Grand Haven, Mich.
Kelley Koett Mfg. Co., The, 212 W. 4th St., Covington, Ky.
Kellogg Div. of The Amer. Brake Shoe Co., 97 Humboldt St., Rochester 9, N. Y.
Kemode Co., The, 161 W. 18th St., New York 11, N. Y.
Ken-Rad Tube & Lamp Corp., Owensboro, Ky.
Kent Co., Inc., The, 357 Canal St., Rome, N. Y.
Kerk-Aloy Co., Bloomington, Ind.
Kerkling, C. A. Metals Co., 1766 N. San Fernando Rd., Burbank, Calif.
Kerotest Mfg. Co., 2525 Liberty Ave., Pittsburgh 22, Pa.
Kester Solder Co., 4201 Wrightwood Ave., Chicago 93, Ill.
Kett Tool Co., 5 E. 3rd St., Cincinnati 2, Ohio.
Keuffel & Esser Co., Adams & 3rd Sts., Hoboken, N. J.
Key Co., Box 494, East St. Louis, Ill.
Keystone Carbon Co., 1935 State St., St. Marys, Pa.
K-G Equipment Co., Inc., 1744 Lehigh St., Allentown, Pa.
Kidde, Walter & Co., Inc., 997 Main St., Belleville 9, N. J.
Kimball Safety Prod. Co., 9310 Wade Park Ave., Cleveland 6, Ohio.
King, Andrew, 67 E. Lancaster Ave., Ardmore, Penn.
Kirk, Morris P., & Son, Inc., 2717 S. Indiana St., Los Angeles 23, Calif.
Kirschner Gloves, Inc., 239 Superior Ave., Oconto Wis.
Klein, Mathies, & Sons, 3200 Belmont Ave., Chicago 18, Ill.
Klem Chemicals, Inc., 14401 Lanson, Dearborn, Mich.
Klenk, Karl, 107 E. 5th St., Wilmington 1, Del.
Klemp Metal Grating Corp., 6603 S. Melvina Ave., Chicago 38, Ill.
Kling Bros. Engrg. Works, 1308 N. Kostner Ave., Chicago 51, Ill.
Knox Mfg. Co., 819 Cherry St., Philadelphia 7, Pa.
Koppers Co., Inc., Tar Products Div., Wallas Dove Hermiston, Inc., 449 S. Ave., Westfield, N. J.
Korn Leather Co., Peabody, Mass.
Kraeuter & Co., Inc., 585 18th Ave., Newark 3, N. J.
Krembs & Co., 669 W. Ohio St., Chicago 10, Ill.
Krieg, Charles W., Co., 48-60 Dickerson St. Newark 4, N. J.
Kriewaldt Specialty Mfg. Co., Oconto, Wis.
Krohn Mfg. & Supply Co., Centreville, Mich.
Kropp Forge Co., 5301 W. Roosevelt Rd., Chicago 50, Ill.
Kunkle Valve Co., 121 S. Clinton St., Ft. Wayne 2, Ind.
Kwikheat Mfg. Co., 3732 San Fernando Rd., Glendale 4, Calif.

L

Laacke, R., Co., 1635 N. 3rd St., Milwaukee, Wis.
Laclede-Christy Co., 1711 Ambassador Bldg., St. Louis 1, Mo.
Ladish Co., 5481 S. Packard Ave., Cudahy, Wis.
Lake Chemical Co., 3052 W. Carroll Ave., Chicago 12, Ill.
Lamson & Sessions Co., 3101 27th Ave., N., Birmingham, Ala.
Lapper Mfg. Co., 2906 W. Grand Blvd., Detroit 2, Mich.
Lapsco Enterprises, 3915 N. Georgia, Box 263, Oklahoma City 6, Okla.
Last Word Sales Co., 18500 Mt. Elliott, Detroit 34, Mich.
Laughlin, Thomas Co., The, 143 Fore St., Portland 6, Me.
Layne-Held Corp., 114 W. 19th St., Higginsville, Mo.
Le Jay Mfg. Co., 2900 Emerson Ave., S., Minneapolis 8, Minn.
Lee, K. O., Co., Congress at First, Aberdeen, S. D.
Lee Rubber & Tire Corp., Albert St., Youngstown 1, Ohio
Leetonia Tool Co., The, 142 Main St., Leetonia, Ohio.
Lehigh Foundries, Inc., Air Control Div., 1500 Lehigh Dr., Easton, Pa.
Lehigh Safety Shoe Co., Race & Court St., Allentown, Pa.
Lenape Hydraulic Pressing & Forging Co., Box 536, West Chester, Pa.
Lepel High Frequency Lab., Inc., 39 W. 60th St., New York 23, N. Y.
Leslie Co., 394 Delafield Ave., Lyndhurst, N. J.
LeTourneau, Westinghouse Co., 2301 N. Adams St., Peoria, Ill.
Lewis Machine Co., The, 3441 E. 76th St., Cleveland 27, Ohio
Lewis Welding & Engrg. Corp., 77 Interstate St., Bedford, Ohio
Lexsuco, Inc., 4815 Lexington, Cleveland, Ohio
Lichtman & Sons, 241 Frelinghuysen Ave., Newark 5, N. Y.
Lignum Vitae Products Corp., 96 Boyd St., Jersey City, N. J.
Lincoln Elec. Co., The, 22801 St. Clair Ave., Cleveland 17, Ohio
Lincoln Engineering Co., 5701 Natural Bridge Ave., St. Louis 20, Mo.
Lindberg Engineering Co., 2450 W. Hubbard St., Chicago 12, Ill.
Linde Air Products Co., A Div. of Union Carbide & Carbon Corp., 30 E. 42nd St., New York 17, N. Y.
Link, O. P., Handle Co., 1st, 2nd & 3rd Sts., Salem, Ind.
Link Welder Corp., 13684 W. Buena Vista, Detroit 27, Mich.
Lintern Corp., The, 58 Lincoln Ave., Berea, Ohio.
Liquid Carbonic Corp., The, Industrial Gas Div., 3100 S. Kedzie Ave., Chicago 23, Ill.
Livingston Electronics Co., Essex Falls, N. J.
Lockrey Co., Lubricants Div., Southampton, N. Y.
Lonergan, J. E., Co., 2nd & Race Sts., Philadelphia 6, Pa.
Louisville Cap Co., 30th & Jefferson Sts., Louisville 12, Ky.
Lucas-Milhaupt Engineering Co., 5051 S. Lake Dr., Cudahy, Wis.
Lufkin Rule Co., 1730 Hess St., Saginaw, Mich.
Lukens Steel Co., First Ave., Coatesville, Pa.
Lunkenheimer Co., P. O. Box 360, Annex Sta., Cincinnati 14, Ohio.
Lutz File & Tool Co., 1905 Lexington Ave., Cincinnati 12, Ohio.
Lyon Metal Products, Inc., 200 Madison Ave., Aurora, Ill.

Mc

McAn, Thom, Safety Shoe Div. of Melville Shoe Corp., 25 W. 43rd St., New York 18, N. Y.
McBurney, A. D., 317 E. 4th St., Los Angeles 13, Calif.
McCabe Mfg. Co., 9 Water St., Lawrence, Mass.
McCauley Alloy Sales Co., 53 W. Jackson Blvd., Chicago 5, Ill.
McClary & Byers Equip. Co., 731 55th St., Oakland 9, Calif.
McDonald, B. F., Co., 5721 W. 96th St., Los Angeles 45, Calif.
McFerron-Myers Products Co., P.O. Box 2657, Cleveland, Ohio.
McGill Mfg. Co., Inc., 259 Indiana Ave., Valparaiso, Ind.
McGonegal Mfg. Co., Railroad Ave. & Mozart St., East Rutherford, N. J.
McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y.
McHale Mfg. Co., 3200 E. Mines Ave., Los Angeles 23, Calif.
McKay Co., 1005 Liberty Ave., Pittsburgh 22, Pa.
MacDermid, Inc., Waterbury 88, Conn.
MacDonald Co., Inc., The, 927 Valley Road, P.O. Box 1707, Reno, Nev.
MacLeod Co., The, 2232-2240 Bogen St., Cincinnati 22, Ohio.
MacMillan Co., 60 Fifth Ave., New York 11, N. Y.

M

M-B Products, 46 Victor Ave., Detroit 3, Mich.
Machinery & Welder Corp., 1324 W. Fulton St., Chicago, Ill.
Machlett Laboratories, Inc., 1063 Hope St., Springdale, Conn.
Macklin Co., 2914 Wildwood Ave., Jackson, Mich.
Magnaflux Corp., 7300 W. Lawrence Ave., Chicago 31, Ill.
MagneTrode Corp., 1708 Main St., Kansas City 8, Mo.
Magnolia Metal Co., 18 W. Jersey St., Elizabeth 4, N. J.
Mahr Mfg. Co., Div. Diamond Iron Works, 1728 N. 2nd St., Minneapolis 11, Minn.
Maitlen & Benson, Inc., 1395 Obispo Ave., Long Beach 4, Calif.
Makepeace Co., D. E., Div. of Union Plate & Wire Co., Pine & Dunham Sts., Attleboro, Mass.
Mall Tool Co., 7740 S. Chicago Ave., Chicago 19, Ill.
Mallory, P. R., & Co., Inc., 3029 E. Washington St., Indianapolis 6, Ind.
Manco Mfg. Co., Washington Ave. & Grove Sts., Bradley, Ill.
Manganese Steel Forge Co., Richmond St. & Castor Ave., Philadelphia 34, Pa.
Manning, Maxwell & Moore, Inc., 11 Elias St., Bridgeport 2, Conn.
Manning, Maxwell & Moore, Inc., Shaw-Box Crane & Hoist Div., Broadway & Park Ave., Muskegon, Mich.
Manual Arts Press, 237 N. Monroe St., Peoria 3, Ill.
Manufacturer's Brush Co., The, 12501 Elmwood Ave., Cleveland 11, Ohio.
Marcus Transformer Co., Inc., Rahway, N. J.
Marion Electrical Instrument Co., 400 Canal St., Manchester, N. H.
Marison Co., The, Mill & River Sts., P. O. Box 178, South Elgin, Ill.
Markel Co., 3052 W. Carroll Ave., Chicago 12, Ill.
Market Forge Co., 27 Garvey St., Everett 49, Mass.
Marks Oxygen Co., 1815 Fifteenth St., Augusta, Ga.
Marquette Mfg. Co., Inc., 307 E. Hennepin Ave., Minneapolis 14, Minn.
Marsh Heating Equipment Co., Div. of Jas. P. Marsh Corp., 2073 Southport Ave., Chicago 14, Ill.
Marsh, Jas. P., Corp., 3501 Howard St., Skokie, Ill.
Martin Electric Co., 3040 E. Outer Dr., Detroit 34, Mich.
Mason Neilan Regulator Co., 1190 Adams St., Boston 24, Mass.
Massillon Refractories Co., The, P.O. Box 557, Massilon, Ohio.
Master Company, 4444 Brooklyn Ave., Los Angeles, Calif.
Master Electric Co., 126 Davis Ave., Dayton 1, Ohio.
Master Pneumatic Tool Co., Inc., 148 Peniman Rd., Orwell, Ohio.
Master Rule Mfg. Co., Inc., 40 Mulberry St., Middletown, N. Y.
Master Vibrator Co., 200 Davis Ave., Dayton 1, Ohio.
Matchless Utilities Co., 303 Cherry St., New York 2, N. Y.
Mauk, A. K., 7501 Hamilton Ave., Pittsburgh 8, Pa.
Maurath, Inc., 21800 Miles Ave., Cleveland 22, Ohio.
Mayhew Steel Products, Inc., 30 Bridge St., Shelburne Falls, Mass.
Mechanics Engrg. Co., Inc., 229 W. Pearl St., Box 243, Jackson, Mich.
Meco Welding Supply Co., 4835 S. Western Blvd., Chicago 9, Ill.
Medart Co., 100 Potomac St., St. Louis 18, Mo.
Merit Products, Inc., 4023 Irving Pl., Culver City, Calif.
Merrill Bros., Inc., 56-02 Arnold Ave., Maspeth 78, N. Y.
Merix Chemical Co., 1021 E. 55th St., Chicago 15, Ill.
Metal Bond Mfg. Co., P. O. Box 215, Montgomery City, Mo.
Metal Removal Co., 1801 Columbia Ave., Chicago 26, Ill.
Metal & Thermit Corp., 100 E. 42nd St., New York 17, N. Y.
Metallizing Co. of America, 3520 W. Carroll Ave., Chicago 24, Ill.
Metallizing Engineering Co., Inc., Westbury, Long Island, N. Y.
Metalloy Products Co., 1351 E. 17 St., Los Angeles 54, Cal.
Metalspray Co., Inc., 114 W. Elmyra St., Los Angeles 12, Calif.
Metro Mfg. Co., 38-11 31st St., Long Island City 1, N. Y.
Metron Instrument Co., 432 Lincoln St., Denver 9, Colo.
Mexico Refractories Co., Cole & Love Sts., Mexico, Mo.
Michigan Abrasive Co., 11900 E. 8 Mile Rd., Detroit, Michigan.
Michigan Clamp Co., Box 243, Jackson, Mich.
Michigan Steel Casting Co., 1999 Guoin St., Detroit 7, Mich.
Michigan Steel Tube Products Co., 9450 Buffalo St., Detroit 12, Mich.
Micro Products Co., 20 N. Wacker Dr., Chicago 6, Ill.
Midland Paint & Varnish Co., The, 3801 E. 91st St., Cleveland 5, Ohio.
Mid-States Welder Mfg. Co., 6025 S. Ashland Ave., Chicago 36, Ill.
Mid West Abrasive Co., 500 S. Washington St., Owosso, Mich.
Midwest Piping & Supply Co., Inc., 1450 S. 2nd St., St. Louis 4, Mo.
Midwest Tool & Mfg. Co., 2411 - 14th Street, Detroit 16, Mich.
Milburn, Alexander, Inc., 1231-45 Ridgely St., Baltimore 30, Md.
Milburn Co., 3246 E. Woodbridge, Detroit 7, Mich.
Miles, John R. R., Inc., 214 4th Ave., S. E., Minneapolis 15, Minn.
Miller Co., The, Meriden, Conn.
Miller Electric Mfg. Co., 247 Riverside Ave., Jacksonville 4, Fla.
Miller Electric Mfg. Co., 718 S. Bounds St., Appleton, Wis.
Miller Fluid Power Co., 2040 N. Hawthorne Ave., Melrose Park, Ill.
Miller-Peerless Mfg. Co., 452 N. Sangamon St., Chicago 22, Ill.

Miller Products Co., Inc., 29 Warren St., New York 7, N. Y.
Millers Falls Co., 57 Wells St., Greenfield, Mass.
Milwaukee Brush Mfg. Co., The, 2236 N. 30th St., Milwaukee 45, Wis.
Milwaukee Elec. Tool Corp., 5316 W. State St., Milwaukee 8, Wis.
Milwaukee Truck & Caster Corp., 6512 W. River Parkway, Milwaukee 13, Wis.
Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.
Minneapolis Honeywell Reg. Co., Industrial Div., Wayne & Windrim Aves., Philadelphia 44, Pa.
Minnesota Mining & Mfg. Co., 900 Fauquier Ave., St. Paul 6, Minn.
Miracle Rod Co. of Illinois, 612 N. Michigan Ave., Chicago 11, Ill.
Mir-O-Col Alloy Co., Inc., 312 N. Ave. 21, Los Angeles 31, Calif.
Misener Manufacturing Co., Inc., 202-8 S. Walton St., Syracuse, N. Y.
Mississippi Valley Struct. Steel Co., 3117 Big Bend Rd., St. Louis, Mo.
Mitchell Radiation Prods. Corp., 128 E. Washington St., Norristown, Pa.
Mitchell Supply Co., 312 Plymouth Ave., No., Minneapolis 11, Minn.
Modern Engineering Co., Inc., 3411 Pine Blvd., St. Louis 3, Mo.
Modern Welding Machine & Equip. Co., 87 Hamilton Place, New York 31, N. Y.
Monaghan, J. J. Co., Inc., 500 Alcott, Denver 4, Colo.
Montpelier Glove Co., Montpelier, Ind.
Moore Corp., John B., P. O. Box 3, Nutley 10, N. J.
Moorwood Mfg. Co., 1718 E. Florence St., Los Angeles 1, Calif.
Morey Flux & Chem. Co., 1813 Williamson St., Wilmington 99, Del.
Morgan Aluminum Welding Rod Co., The, 17706 Miles Ave., Cleveland 28, Ohio.
Morgan Vise Co., 108 N. Jefferson St., Chicago 6, Ill.
Morris, Wheeler & Co., Inc., Fox Street & Roberts Ave., Philadelphia 29, Pa.
Morrison Prod., Inc., 16816 Waterloo Road, Cleveland 10, Ohio
Morse Twist Drill & Machine Co., 163 Pleasant St., New Bedford, Mass.
Morton Manufacturing Co., Broadway & Hoyt, Muskegon Heights, Mich.
Morton Salt Co., 120 S. La Salle St., Chicago 3, Ill.
Moslo Machinery Co., 2443 Prospect Ave., Cleveland 15, Ohio.
Motor Wheel Co., Lansing, Mich.
Mott Products Co., 524 N. Jackson St., Jackson, Mich.
Mowatt, Geo. R., Co., 24 W. 40th St., N. Y. 18 N. Y.
Mueller Brass Co., 1925 Lapeer Ave., Port Huron, Mich.
Mueller Co., 512 W. Cerro Gordo St., Decatur, Ill.
Mueller Electric Co., 1583 E. 31st St., Cleveland 14, Ohio
Mulconroy Co., 54th & Jefferson St., Philadelphia 31, Pa.
Mullenbach Div., Electric Machinery Mfg. Co., 2300 E. 27th St., Los Angeles 58, Calif.
Multi-Amp Corp., 10 Third St., Newark, N. J.
Multi-Hydromatic Welding & Mfg. Co., 23171 Groesbeck Hwy., E., Detroit, Mich.
Multi Products Tool Co., 123 Sussex Ave., Newark 4, N. J.
Munton Mfg. Co., 9400 Belmont Ave., Franklin Park, Ill.
Murine Co., Inc., The, 660 N. Wabash Ave., Chicago 11, Ill.

N

Nageldinger, John & Son, Inc., 366 E. 153 St., Bronx 55, N. Y.
National Cable Corp., 2737 S. 34th St., Milwaukee 15, Wis.
National Carbide Corp., Div., Air Reduction Co., Inc., 60 E. 42nd St., New York 17, N. Y.
National Carbon Co., Div. of Union Carbide & Carbon Corp., 30 E. 42nd St., New York 17, N. Y.
National Cylinder Gas Co., 840 N. Michigan Ave., Chicago 11, Ill.
National Detailing Co., 4652 Echo Glen, Pittsburgh 36, Pa.
National Elec. Products Co., 1310 Chamber of Commerce Bldg., P. O. Box 897, Pittsburgh 30, Pa.
National Elec. Weld. Mach. Co., 1846-1916 N. Trumbull St., Bay City, Mich.
National Electronics, Inc., 628 North Street, Geneva, Ill.
National Lead Co., 111 Broadway, Room 1815, New York 6, N. Y.
National Machine Tool Co., 1536 Clark St., Racine, Wis.
National Powder Extinguisher Corp., 50 Rockefeller Plaza, New York 20, N. Y.
National Screw & Mfg. Co., Chester Hoist Div., The, Lisbon, Ohio
National Steel Corp., Ecorse, Detroit 18, Mich.
National Supply Co., 3320 Bishop St., Toledo 1, Ohio.
National Technical Products, Inc., 83-91 W. Forest Ave., Englewood, N. J.
National Time & Signal Corp., 21800 Wyoming Ave., Detroit 37, Mich.
National Torch Tip Co., Freeport Road, Pittsburgh 15, Pa.
National Tube Co., U. S. Steel Corp. Subsidiary, Frick Bldg., Pittsburgh 19, Pa.
National Twist Drill & Tool Co., Rochester, Mich.
National Welders Supply Co., Inc., 1230 S. Tryon St., Charlotte 1, N. C.
National Welding Equipment Co., 218 Fremont St., San Francisco 5, Calif.
Naylor Pipe Co., 1230 E. 92nd St., Chicago 19, Ill.
Neal Co., 2806 Leavenworth St., Omaha, Nebr.
Neilson Wheel Co., 1614 N. 12th St., Milwaukee 5, Wis.
Nelson, Herman, Div., Amer. Air Filter Co., Inc., 1824 Third Ave., Moline, Ill.
Nelson Stud Welding, Div. of Gregory Industries, Inc., E. 28th & Toledo Ave., Lorain, Ohio
Nelsonville Fdry. & Machine. Co., 1021-81 Chestnut, Nelsonville, Ohio.
New Britain Machine Co., South St., New Britain, Conn.
New England Gas Prdts., Inc., 40 Central St., Room 700, Boston 9, Mass.
New Era Engineering, 458 W. 29th St., Chicago 16, Ill.
New Mexico Steel Co., 510 W. Marquette, Albuquerque, N. M.
N. Y. Belting & Packing Co., 1 Market St., Passaic, N. J.
Newage International Inc., 235 E. 42nd St., New York, N. Y.
Newhall Chain Forge & Iron Co., Westwood, N. J.
Niagara Machine & Tool Works, 637-697 Northland Ave., Buffalo 11, N. Y.
Nicholson File Co., 23 Acorn St., Providence 6, R. I.
Niles Fire Brick Co., 165 E. Park Ave., Niles, Ohio.
Norgren, C. A. Co., 222 Santa Fe Dr., Denver 9, Colo.
Norris-Thermador Corp., 5215 S. Boyle Ave., Los Angeles 58, Calif.
North American Mfg. Co., 2910 E. 75th St., Cleveland 4, Ohio.
North American Philips Co., Inc., Elmet Division, Lisbon Road, Lewiston, Maine.
North American Philips Co., Inc., Research & Control Instruments Div., 750 S. Fulton Ave., Mt. Vernon, N. Y.
North American Press, 728 N. 7th St., Milwaukee 1, Wis.
North American Refractories Co., 1012 National City Bank Bldg., Cleveland 14, Ohio.
Northeast Metals Co., 4124 Torresdale Ave., Philadelphia 24, Pa.
Northern Indiana Brass Co., 935 Plum St., Elkhart, Ind.
Northern Engineering Works, 2615 Atwater St., Detroit 7, Mich.
Northrop Aircraft, Inc., Hawthorne, Calif.
Norton Co., 1 New Bond St., Worcester 6, Mass.
Nox Rust Chemical Corp., 2443 S. Halsted St., Chicago 8, Ill.
Nu-Jett Products Corp., 1355 Michigan Ave., N.E., Grand Rapids, Mich.
Nu-Matic Grinders, Inc., 8224 Carnegie Ave., Cleveland 3, Ohio
Nu Steel Co., 1714 S. Ashland Ave., Chicago 8, Ill.
Nutt, The Buell W. Co., 2225 S. Hoover St., Los Angeles, Calif.
Nye Tool & Machine Co., 4120 Fullerton Ave., Chicago 39, Ill.

O

O. Z. Electrical Mfg. Co., Inc., 262 Bond St., Brooklyn 2, N. Y.
Oakite Products, Inc., 19 Rector St., New York 6, N. Y.
Ohio Carbon Co., The, 12508 Berea Rd., Cleveland 11, Ohio.
Ohio Crankshaft Co., Tocco Div., 3800 Harvard Ave., Cleveland 1, Ohio.
Ohio Injector Co., 200 S. Injector St., Wadsworth Ohio.
Ohio Nut & Bolt Co., 25 First Ave., Berea, Ohio.
Ohio Seamless Tube Co., 132-140 W. Maine St., Shelby, Ohio.
Ohlen Bishop Mfg. Co., 901 Ingleside Ave., Columbus 8, Ohio.
Ohmer, George H., P. O. Box 34, Sta. D, Dayton 10, Ohio.
Ohmite Mfg. Co., 4835 W. Flournoy St., Chicago 44, Ill.
Ohmstede Machine Works, 897 N. Main St., Beaumont, Tex.
Oklahoma Oxygen Co., 2750 Sand Spring Rd., P. O. Box 910, Tulsa 1, Okla.
Okonite Co., 946 Canal St., Passaic, N. J.
Olsen, Lester S., 505 W. Cherry St., Milwaukee 12, Wis.
Olympic Glove Co., 95 Madison Ave., New York 16, N. Y.
Omicon Co., The 532 W. Windsor Rd., P. O. Box 907, Glendale 4, Calif.
Onan, D. W., & Sons, Inc., University Ave., S. E. at 25th, Minneapolis 14, Minn.
O'Neil-Irwin Mfg. Co., 300 8th Ave., Lake City, Minn.
Optimus Equipment Co., Matawan, N. J.
Osage Metal Co., Inc., 1413 S. Blackwelder Ave., P. O. Box 2445, Oklahoma City, Okla.
Osborn Mfg. Co., 5401 Hamilton Ave., Cleveland 14, Ohio.
Osmundson Spade Mfg. Co., 1524 Third St., Perry, Ia.
Oster Mfg. Co., 2057 E. 61st Pl., Cleveland, Ohio.
Overly, Chas. F., Co., 1753 Rosedale Ave., Cleveland 12, Ohio.
Overbeke-Kain Co., 21034 Aurora Rd., Bedford, Ohio
Owatonna Tool Co., 340 N. Cedar St., Owatonna, Minn.
Owen Electric Co., Fayetteville, N. C.
Oxford Tool Co., 1633-5-7 N. 2nd St., Philadelphia 22, Pa.
Oxigeno de Tampico, S. A., Apartado No. 770, Tampico, Tamps., Mexico.
Oxo Welding Equipment Co., 1235 W. 95th St., Chicago 43, Ill.

P

Paasche Airbrush Co., 1909 Diversey Pkwy., Chicago 14, Ill.
Pacific Acetylene Co., 2205 Newton Ave., San Diego, Calif.
Pacific Carbide & Alloys Co., P. O. Box 5607, Kenton Station, Portland 17, Ore.
Pacific Engrg. Corp., 3123 San Fernando Rd., Los Angeles 41, Calif.
Pacific Hardware & Steel Co., Inc., 1344 the Alameda, San Jose 26, Calif.
Pacific Oxygen Co., 2205 Magnolia St., Oakland 7, Calif.
Pacific Transducer Corp., 11921 W. Pico Blvd. Los Angeles, Calif.
Pacific Welding Alloys Mfg. Co., 310 N. Avenue 21, Los Angeles 31, Calif.
Page Steel & Wire Div., American Chain & Cable Co., Inc., Monessen, Pa.
Paine Co., The, 2 Westgate-Addison, Chicago, Ill.
Pako Corp., Minneapolis 11, Minn.
Pal-Weld Mfg. Co., 103 Lander St., Seattle 4, Wash.
Palmer Shile Co., 16000 Fullerton, Detroit, Mich.
Pandjiris Weldment Co., The, 5151 Northrup Ave., St. Louis 10, Mo.
Papec Machine Co., Shortville, N. Y.
Pangborn Corp., Hagerstown, Md.
Paranite Wire Cable Div., Essex Wire Corp., 1601 Wall St., Ft. Wayne 6, Ind.
Park Chemical Co., 8074 N. Military, Detroit, Mich.
Park Metalware Co., Orchard Park, N. Y.
Parker, Charles Co., 50 Hanover St., Meriden, Conn.
Parker Appliance Co., 17325 Euclid Ave., Cleveland 12, Ohio.
Parker Kalon Corp., 200 Varick St., New York 14, N. Y.
Parsons Engineering Corp., 2545 E. 79th St., Cleveland 4, Ohio.
Patrol Valve Co., 2310 Superior Ave., Cleveland 14, Ohio
Patent Specialties, Inc., 10307 N. W. 7th Ave., Miami 38, Fla.
Paul C. Roche Co., Inc., 11 Park Place, New York 7 N. Y.
Paulsen Webber Cordage Corp., 170-176 John St., New York 7, N. Y.
Peck, Cecil C., Co., 4614 Prospect Ave., Cleveland 3, Ohio
Peck, Stow & Wilcox Co., Center St., Southington, Conn.
Pedrick Tool & Mach. Co., 3640 N. Lawrence St., Philadelphia 40, Pa.
Peer Inc., 1200 Milton St., Benton Harbor, Mich.
Peerless Machine Co., 1600 Junction Ave., Racine, Wis.
Peninsular Grinding Wheel Co., 729 Meldrum Ave., Detroit 7, Mich.
Pennsylvania Optical Co., 234 S. Eighth St., Reading, Pa.
Penn Tool & Machine Co., Danville, Ill.
Penn Salt Mfg. Co., Special Chemicals Dept., 334 Widener Bldg., Philadelphia 7, Pa.
Penton Publishing Co., The Penton Bldg., Cleveland 13, Ohio.
Perfect Glove Co., Inc., 102 E. Walnut St., Milwaukee 12, Wis.
Perfection Stove Co., 7609 Platt Ave., Cleveland 4, Ohio
Permagile Corp. of America, The, New York, N. Y.
Perma-latem Welding Alloys, Inc., 209 Patterson Ave., Red Bank, N. J.
Peters-Dalton, Inc., 17902 Ryan Rd., Detroit 12, Mich.
Petersen Mfg. Co., Inc., Dewitt, Neb.
Peterson Welding Laboratories, Inc., 1423 Virginia Ave., Kansas City 6, Mo.
Phelps Dodge Copper Products Corp., 40 Wall St., New York 5, N. Y.
Philadelphia Chain Block & Mfg. Co., Inc., Mascher & Norris Sts., Philadelphia 22, Pa.
Philadelphia Quartz Co., 1146 Public Ledger Bldg., 6th & Chestnut Sts., Philadelphia 6, Pa.
Philips Electrical Ltd., Century House, Shaftesbury Ave., London W.C. 2, England
Phillips, C. E., & Co., 2750 Poplar St., Detroit 8, Mich.
Phillips Mfg. Co., 3475 Touhy Ave., Chicago 45, Ill.
Phoenix Products Co., 4715 N. 27th St., Milwaukee 16, Wis.
Phosphor Bronze Corp., 20 Franklin St., Seymour, Conn.
Photologue Publishing Co., 600 W. Jackson Blvd., Chicago 6, Ill.
Photoswitch, Inc., 77 Broadway, Cambridge 42, Mass.
Photovolt Corp., 97 Madison Ave., New York 16, N. Y.

Picker X-Ray Corp., 25 S. Broadway, White Plains, N. Y.
Pierce Governor Co., Inc., The, P.O. Box 1000, 1601 Ohio Ave., Anderson, Ind.
Pigg, Marvin H., 928 Arnold St., Galesburg, Ill.
Pilotrol Corp., P. O. Box 172, Springfield, N. J.
Pioneer Welding Mfg. Co., 934 2nd St., Kalamazoo, Mich.
Pipe Line Development Co., 5700 Detroit Ave., Cleveland 2, Ohio.
Pitman Publishing Corp., 2 W. 45th St., New York 19, N. Y.
Pittsburgh Metals Purifying Co., 1352 Marvista St., Pittsburgh 12, Pa.
Pittsburgh Plate Glass Co., Brush Div., 3221 Frederick Ave., Baltimore 29, Md.
Pittsburgh Steel Co., 1642 Grand Bldg., Pittsburgh 30, Pa.
Plastal Mfg. Co., 1212 E. Green St., Pasadena 5, Calif.
Plastic Wire & Cable Co., 403 E. Main St., Jewett City, Conn.
Platz Co., Inc., 20433 Sherwood Ave., Detroit 34, Mich.
Plibrico Jointless Firebrick Co., 1800 Kingsbury St., Chicago 14, Ill.
Plomb Tool Co., 2209 Santa Fe Ave., Los Angeles 54, Calif.
Plumb, Fayette R., Inc., 4837 James St., Philadelphia 37, Pa.
Plykrome Corp., 70 Pine St., New York 5, N. Y.
Popular Mechanics, 200 E. Ontario, Chicago 11, Ill.
Portable Electric Tools, Inc., 320 W. 83 St., Chicago 20, Ill.
Porter-Cable Machine Co., 1714 N. Salina St., Syracuse 8, N. Y.
Porter, C. O., Machinery Co., 666 Front Ave., Grand Rapids 7, Mich.
Porter, H. K., Inc., 74 Foley St., Somerville 43, Mass.
Port-O-Matic, Inc., Hillsboro, Oregon
Potter Instrument Co., 115 Cutter Mill Rd., Great Neck, N. Y.
Powder Weld Process Co., 419 Kent Ave., Brooklyn 11, N. Y.
Powell, Wm., Co., 2525 Spring Grove Ave., Cincinnati 22, Ohio
Power Tools, 1931 Univ. Ave., Minneapolis, Minn.
Pratt-Breyman Co., Oscoda, Mich.
Pratt & Whitney Div., I Charter Oak Blvd., Niles-Bement-Pond Co., West Hartford 1, Conn.
Precision Electronic Research Co., Glendora, Calif.
Precision Scientific Co., 1736-54 N. Springfield Ave., Chicago 47, Ill.
Precision Tool & Mfg. Co., 1305 S. Laramie, Cicero, Ill.
Precision Tool Sales, 417 E. Florence, Los Angeles, Calif.
Precision Welder & Flexopress Corp., 3520 Ibsen Ave., Cincinnati 9, Ohio.
Precision Welder Mfg. Co., 660 W. Grand Ave., Chicago, Ill.
Prenco Prods., Inc., 507 E. 10 Mile Rd., Hazel Park, Mich.
Pressed Steel Tank Co., 1445 S. 66th St., Milwaukee 14, Wis.
Presstite Engrg. Co., 1908 Chouteau Ave., St. Louis 10, Mo.
Pressure Products Corp., 8225 N. Christian, Skokie, Ill.
Price & Rutzebeck Co., P. O. Box 30, Hayward, Calif.
Prier Brass Mfg. Co., 7719 15th St., Kansas City, Mo.
Primeweld Corp., 8850 Mark Twain, Detroit 28, Mich.
Production Devices, Inc., N. William St., Whitehall, N. Y.
Progressive Welder Sales Co., 3070 E. Outer Drive, Detroit 34, Mich.
Pulmosan Safety Equip. Corp., 644 Pacific Street, Brooklyn 17, N. Y.
Punch-Lok Co., 321 N. Justine St. Chicago 25, Ill.
Pure Carbon Co., Inc., 441 Hall Ave., St. Mary's, Pa.
Puritan Compressed Gas Corp., 2012 Grand Ave., Kansas City 8, Missouri.
Purity Cylinder Gases, Inc., 574 S. Division Ave., Grand Rapids 3, Mich.
Purnell Alloy Co., P.O. Box 158, Angleton, Tex.
Pyle-National Co., 1334 N. Kostner Ave., Chicago 51, Ill.
Pynosol Laboratories, Inc., 1714 S. Ashland Ave., Chicago 8, Ill.
Pyramid Instrument Corp., Lynbrook, N. Y.
Pyramid Steel Co., 4527 Hough Ave., Cleveland 3, Ohio.
Pyrene Mfg. Co., 560 Belmont Ave., Newark 8, N. J.
Pyrometer Service Co., Inc., 348 River Rd., North Arlington, N. J.

Q

Quadriga Mfg. Co., 213 W. Grand Ave., Chicago 10, Ill.
Quaker Chem. Prods. Corp., Elm & Lime Sts., Conshohocken, Pa.
Quaker Rubber Corp., Tacony & Comly Sts., Philadelphia 24, Pa.
Quality Tools Corp., New Wilmington, Pa.
Quigley Co., Inc., 527 5th Ave., New York 17, N. Y.
QuiJada Tool Co., Inc., 5474 Alhambra Ave., Los Angeles 32, Calif.

R

R-D Co., P. O. Box 912, Flint, Mich.
R-S Prods. Corp., 4530 Germantown Ave., Philadelphia 44, Pa.
Rabin Glove Co., 407 Grove St., Jersey City, N. J.
Racine Glove Co., Inc., Box 202, Rio, Wis.
Racine Tool & Machine Co., 1760 State St., Racine, Wis.
Radient Lamp Corp., 300 Jelliff Ave., Newark 8, N. J.
Radio Corp. of America, Camden, N. J.
Radio Corp. of America, R.C.A. Tube Dept., 415 S. 5th St., Harrison, N. J.
Radio Frequency Co., 44 Park St., Medfield, Mass.
Radium Chemical Co., Inc., 570 Lexington Ave., New York 22, N. Y.
Ragel, J. M. Industries, 4029 Indiana Ave., Kansas City 30, Mo.
Railway Track Work Co., Clementine, Thompson & Mercer Sts., Philadelphia, Pa.
Randall Graphite Bearings, Inc., 207 E. Market, Lima, Ohio.
Randall Mfg. Co., 1852 Burlington Ave., N. Kansas City 16, Mo.
Randolph Laboratories, Inc., 8 E. Kinzie St., Chicago 11, Ill.
Rankin Mfg. Co., 616 Marengo Ave., Alhambra 2, Calif.
Ransome Mfg. Co., 4030 Hollis St., Emeryville, Calif.
Rapid Mfg. Co., Inc., 6305 San Fernando Rd., Glendale 1, Calif.
Rapiddesign, Inc., 111-B S. Orange St., Glendale 4, Calif.
Rasmussen Iron Works, 1007 W. Philadelphia St., Whittier, Calif.
Ray Proof Corp., 513 W. 54th St., New York 19, N. Y.
Raybestos Manhattan, Inc., Manhattan Rubber Div., 61 Willett St., Passaic, N. J.
Raybestos-Manhattan, Inc., 42 Towsend St., Passaic, N. J.
Raytheon Mfg. Co., Equipment Sales Div., 100 River Street, Waltham 54, Mass.
Raymond Corp., 239-126 Madison St., Greene, N. Y.
Reading, Pratt & Cady Valve Div., American Chain & Cable Co., Inc., Reading, Pa.
Ready-Power Co., 11231 Freud Ave., Detroit, Mich.
Red Devil Tools, Inc., 130 Colt St., Irvington, N. J.
Ree Associates, 30 Queen Anne Rd., Bogota, N. J.
Reed Mfg. Co., 1425 W. 8th St., Erie, Pa.
Rees, Mackworth G., Inc., 1573 E. Forest Ave., Detroit 7, Mich.
Reid-Avery Co., Cleveland & Chesapeake Ave., Baltimore 22, Md.
Reiner & Campbell Co., Inc., 19 Euclid Ave., Newark, N. J.
Reinhold Publishing Corp., 330 W. 42nd St., New York 36, N. Y.
Reliance Electric & Engrg. Co., 1088 Ivanhoe Rd., Cleveland, Ohio
Reliance Steel Div., Detroit Steel Corp., 1170 Ivanhoe Rd., Cleveland 10, Ohio.
Reltool Corp., 4540 W. Burnham St., Milwaukee 14, Wis.
Remont Manufacturing Co., 13th & Meyers Rd., Lombard, Ill.
Resisto-Loy Co., 127 Baylis St., S.W. Grand Rapids 7, Mich.
Republic Drill & Tool Co., 322 S. Green St., Chicago, Ill.
Republic Rubber Div., Lee Rubber & Tire Corp., Albert St., Youngstown 1, Ohio.
Republic Steel Corp., Republic Bldg., Cleveland 1, Ohio.
Research Industries, Ltd., 419 Book Bldg., Detroit 26, Mich.
Resistance Welder Corp., 116 First St., Bay City, Mich.
Resistance Welder Mfrs. Assn., 1900 Arch St., Philadelphia, Pa.
Resisto-Loy Co., 127 Baylis St., S. W., Grand Rapids 7, Mich.
Resistoflex Corp., 39 Planeson St., Belleville 9, N. J.
Revere Copper & Brass, Inc., 230 Park Ave., New York 17, N. Y.
Revere Copper & Brass, Inc., 230 Park Ave., New York 17, N. Y.
Revolvator Co., U. S. Route 1, North Bergen, N. J.
Rex Welder & Engrg. Co., 409 S. West Blvd., Kansas City 8, Mo.
Reynolds Metals Co., 2500 S. 3rd St., Louisville 1, Ky.
Richards, Arkley S., Co., Inc., 72 Winchester St., New Highlands 61, Mass.
Richards Wilcox Mfg. Co., 176 3rd St., Aurora, Ill.
Rice-Peterson Sales, Inc., P. O. Box 1114, Palo Alto, Calif.
Ridge Tool Co., 400 Clark St., Elyria, Ohio.
Riehle Testing Machines Div., American Machine & Metals, Inc., East Moline, Ill.
Riverside Iron & Engineering Works, Ltd., 803 24th Ave., S. E., Calgary, Alberta, Canada.
Riverside Machinery Co., 10632 S. Michigan Ave., Chicago, Ill.
Riverside Metal Co., Riverside, Burlington Co., N. J.
Rivett Lathe & Grinder, Inc., 18 Riverview Road, Brighton 35, Mass.
Roberts Weldon, Rubber Co., 351-365 Sixth Ave., Newark 7, N. J.
Robertson Mfg. Co., S. Pennsylvania Ave. & Green St., Morrisville, Pa.
Robbins & Myers, Inc., 1345 Lagonda Ave., Springfield 99, Ohio.
Robotron Corp., 5570 W. Chicago St., Detroit 19, Mich.
Robvon Corp., 675 Garden St., Elizabeth, N. J.
Roche Co., Inc., Paul C., 11 Park Place, New York 7, N. Y.
Rockuber Corp., Rapid City, S. D.
Rockwell, W. S., Co., 50 Church St., New York 7, N. Y.
Roden, Philip Co., 1721 E. Lake Bluff Blvd. Milwaukee 11, Wis.
Roebling's Sons Corp., John A., 640 S. Broad St., Trenton 2, N. J.
Roesch Tool Products, 3338 S. Robertson Blvd., Los Angeles 34, Calif.
Rome Cable Corp., Ridge St., Rome, N. Y.
Ronald Press Co., 15 E. 26th St. New York 10, N. Y.
Roots Connersville Blower Corp., 900 W. Mount St., Connersville, Ind.
Ross, J. O., Engineering Corp., 350 Madison Ave., New York 17, N. Y.
Ross Operating Valve Co., 120 E. Golden Gate Ave., Detroit 3, Mich.
Rotor Tool Co., The, 26300 Lakeland Blvd., Cleveland 23, Ohio.
Round, David & Son, Aurora & Solon Rd., Cleveland 5, Ohio.
Royal Arc Industries, Inc., Chillicothe, Ill.
Roylyn, Inc., 1706 Standard Ave., Glendale 1, Calif.
Royson Engineering, Hatboro, Pa.
Rubicon Co., Ridge Ave. at 35th St., Philadelphia, Pa.
Ruby Chemical Co., The, 68-70 McDowell St., Columbus 8, Ohio.
Ruemelin Mfg. Co., 3860 N. Palmer St., Milwaukee 12, Wis.
Russell Electric Co., 4501 S. Western Blvd., Chicago, Ill.
Russell, Frank, Glove Co., Berlin, Wis.
Rust Oleum Corp., 2413 Oakton St., Evanston, Ill.
Rustless Iron & Steel Corp., Baltimore 13, Md.
Ryerson, J. T., & Son, Inc., P.O. Box 8000-A, Chicago 80, Ill.
Ryman Engineering Co., Inc., 523 Spring Ave., Ellwood City, Pa.

S

Sabine Oxygen Co., P. O. Box 756, Pt. Arthur, Texas.
S & L Mfg. Co., Gardena, Calif.
S. C. Leather Co., 819 5th Ave., Pittsburgh 19, Pa.
S-M-S Corp., 1165 Harper Ave., Detroit 11, Mich.
Safety Clothing & Equip. Co., 1990 E. 69th St., Cleveland 3, Ohio
Safety First Supply Co., 425 Magee St., Pittsburgh 19, Pa.
Safety Gas Lighter Co., 56 Sanderson Ave., Lynn, Mass.
Safety Grinding Wheel Co., 2258 Columbus Ave., Springfield, Ohio.
St. John X-Ray Lab., Califon, N. J.
St. Pierre Chain Corp., 50 Frank St., Worcester 4, Mass.
Salem Tool Co., 767 S. Ellsworth Ave., Salem, Ohio.
Sales Service Mach. Tool Co., 2349 University Ave., St. Paul 4, Minn.
Salkover Metal Processing of Illinois, Inc., 2550 Edgington Ave., Franklin Park, Ill.
Salsbury Corp., 1161 E. Florence Ave., Los Angeles 1, Calif.
Sand-O-Flex Corp., 4373 Melrose Ave., Los Angeles 27, Calif.
Sandusky Abrasive Wheel Co., 623 W. Ransom St., Kalamazoo 18, Mich.
Sandvik Saw & Tool Corp., 47 Warren St., New York 7, N. Y.
Sasgen Derrick Co., 3101 W. Grand Ave., Chicago 22, Ill.
Saylor Beall Mfg. Co., St. John, Mich.
Scherr, George, Co., Inc., 200 Lafayette St., New York, N. Y.
Schmieg Industries, Inc., P. O. Box 4701, Detroit 34, Mich.
Schoenberger, J. W., Co., 8810 Harvard St., Cleveland, Ohio
Schoitz Engrg. Works, Waterloo, Iowa.
Schrader's Son, A., Div. of Scovill Mfg. Co., Inc., 470 Vanderbilt Ave., Brooklyn 17, N. Y.
Schramm, Inc., West Chester, Pa.
Schwerdtle Stamp Co., 166 Elm St., Bridgeport 3, Conn.
Sciaky Bros., Inc., 4915 W. 67th St., Chicago 38, Ill.
Scientific Elec., 119 Monroe St., Garfield, N. J.
Scientific Research Co., 1618 N. Vancouver Ave., Portland 12, Ore.
Scott Mfg. Co., 11 E. 17th St., Kansas City 8, Mo.
Scovill Mfg. Co., 99 Mill St., Waterbury 20, Conn.
Sears, Roebuck & Co., 925 S. Homan Ave., Chicago 7, Ill.
Security Valve Co., 410 N. San Fernando Rd., Los Angeles 31, Calif.
Seles Corp. of America, Erie Ave. & D St., Philadelphia 34, Pa.
Sellstrom Mfg. Co., 226 Hicks Rd., Palatine, Ill.
Service Machine Co., 156 Miller St., Elizabeth 4, N. J.

Seymour Mfg. Co., The, 15 Franklin St. Seymour, Conn.
Sharon Steel Corp., Sharon, Pa.
Shawinigan Products Corp., Empire State Bldg., 350 Fifth Ave., New York 1, N. Y.
Shepard-Niles Crane & Hoist Co., 472 Schuyler Ave., Montour Falls, N. Y.
Shellcross Mfg. Co., 520 Pusey Ave., Collingdale,
Sherman & Co., 36-07 Prince St., Flushing, N. Y.
Sherman, H. B., Mfg. Co., 22 Barney St., Battle Creek, Mich.
Shieldalloy Corp., 99 Park Ave., New York 16, N. Y.
Shielded Stud Welding Co., 124 W. 4th St., Los Angeles, Calif.
Shober Sales, Inc., 900 W. Weber Ave., Stockton, Calif.
Shook Bronze Corp., Greenlawn & Lake Sts., Lima, Ohio.
Shoot-A-Lite Corp., 75 West St., New York 6, N. Y.
Shrader, F. W., Co., 5788 W. Washington Blvd., Culver City, Calif.
Sierra Oxygen Co., 1300 East Second St., Reno, Nev.
Sierra Welding Flux Co., P. O. Box 272, Temple City, Calif.
Siewek Tool Co., 2862 E. Grand Blvd., Detroit 2, Mich.
Sight Feed Generator Co., P. O. Box No. 38, West Alexandria, Ohio.
Sightmaster Corp., 111 Cedar St., New Rochelle, N. Y.
Silent Glow Oil Burner Corp., 850 Windsor St., Hartford, Conn.
Silent Hoist & Crane Co., 841 63rd St., Brooklyn 20, N. Y.
Silicone Paper Co. of Amer., Inc., 230 Park Ave., New York, N. Y.
Simonds Abrasive Co., Tacony & Frelay Sts., Philadelphia 37, Pa.
Simonds Saw & Steel Co., 470 Main St., Fitchburg, Mass.
Simonds, Worden, White Co., Summit St. at Negley Pl., Dayton 7, Ohio.
Simplex Wire & Cable Co., 79 Sidney St., Cambridge 39, Mass.
Singer Glove Mfg. Co., 860 W. Weed St., Chicago 22, Ill.
Singer Leather Co., 129 N. 12th St., Philadelphia 7, Pa.
Sinonski, Gilbert S., 401 N. Broad St., Philadelphia 8, Pa.
SKIL Corp., 5033 Elston Ave., Chicago 30, Ill.
Smith, A., & Son, Inc., 1239 Ridge Ave., Philadelphia 23, Pa.
Smith, A. O., Corp., 3533 N. 27th St., Milwaukee 1, Wis.
Smith Bros. & Hughes, 5304 Banks St., San Diego, Calif.
Smith, Gordon & Co., Inc., 348 College St., Bowling Green, Ky.
Smith, G. W., & Sons, Inc., 5400 Kemp Rd., Dayton 3, Ohio.
Smith, Seymour, & Sons, Inc., Box 591, Oakville, Conn.
Smith Welding Equip. Corp., 2633 4th St., S. E., Minneapolis 14, Minn.
Smooth-On Mfg. Co., 572 Communipaw Ave., Jersey City 4, N. J.
Snap Tite, Inc., 1710 French St., Erie, Pa.
So-Lo Works, Twight Wee Rd., Loveland, Ohio.
Solar Aircraft Co., 2200 Pacific Hwy., San Diego 12, Calif.
Solo Horton Brush Co., Inc., 135 W. 19th St., New York 11, N. Y.
Solventol Chem. Prods., Inc., 15841 2nd Blvd., Detroit 3, Mich.
Sonneborn, L., Sons, Inc., 88 Lexington Ave., New York 16, N. Y.
Southern Oxygen Co., Inc., P. O. Box 5087, Washington 19, D. C.
Southwest Welding & Mfg. Co., Alhambra, Calif.
S-P Mfg. Corp., 12415 Euclid Ave., Cleveland 6, Ohio
Spartan Saw Works, Inc., 152 Fisk Ave., Springfield 7, Mass.
Special Chemicals Corp., 100 S. Water St., Ossining, N. Y.
Special Engrg. Service, Inc., 8161 Livernois Ave., Detroit
Specialty Coatings, Inc., 1085 Allegheny Ave., Oakmont, Pa.
Speedway Mfg. Co., 1834 S. 52nd Ave., Cicero 50, Ill.
Spear Carbon Co., Theresia St., St. Marys, Pa.
Spekaluminite Co., 100 S. Water St., Ossining, N. Y.
Sperry Products, Inc., Danbury, Conn.
Spring Specialty Co., 1219 W. Madison St., Maywood, Ill.
Square-D Co., Industrial Controller Div., 4041 N. Richards St., Milwaukee 12, Wis.
S-S Co., 830 Humboldt St., Brooklyn 22, N. Y.
Stackpole Carbon Co., Tannery, St. Marys, Pa.
Stahl Equipment Co., 94 Washington St., Brookline Village 46, Mass.
Standard Electrical Tool Co., 2488-96 River Rd., Cincinnati 4, Ohio.
Standard Electrode & Mfg. Co., 445 E. High St., Philadelphia 44, Pa.
Standard Machinery Co., 1475 Elmswood Ave., Providence 7, R. I.
Standard Portable Cord Co., Inc., 1300 E. 2nd, Jamestown, N. Y.
Standard Pressed Steel Co., Jenkintown 13, Pa.
Standard Research Inc., 460 Grand Ave., New Haven 13, Conn.
Standard Safety Equipment Co., 232 W. Ontario St., Chicago 10, Ill.
Standard Steel & Wire Co., Bolivar, Pa.
Standard Supply Co., 460 Grand Ave., New Haven 13, Conn.
Standard Tool Co., 3950 Chester Ave., Cleveland 14, Ohio.
Standard Tube Co., 24400 Plymouth Rd., Detroit 28, Mich.
Standard X-Ray Co., 1932 N. Burling St., Chicago 14, Ill.
Stanley Elec. Tools, Div. of the Stanley Works, 480 Myrtle St., New Britain, Conn.
Stanley Tools, Div. of the Stanley Works, 111 Elm St., New Britain, Conn.
Star Mfg. Co., Div. of Illinois Iron & Bolt Co., Carpentersville, Ill.
Stark Mfg. Co., Tuscaloosa, Ala.
Starrett, L. S., Co., Athol, Mass.
Stearns Magnetic, Inc., 635 S. 28 St., Milwaukee 46, Wis.
Stearns, Roger, Mfg. Co., 1720 California St., Denver 2, Colo.
Steel City Testing Machines, Inc., 8817 Lyndon Ave., Detroit, Mich.
Steel & Tubes Div., Republic Steel Corp., 224 E. 131 St., Cleveland 8, Ohio
Steel Sales Corp., 3348 S. Pulaski Rd., Chicago 23, Ill.
Steele Gases, Inc., 1421 Circle Ave., Forest Park, Ill.
Steiner-Ives Co., 689 Springfield Ave., Union, N. J.
Stephens-Adamson Mfg. Co., 9 Ridgeway Ave., Aurora, Ill.
Sterling Grinding Wheel Div. of The Cleveland Quarries Co., Tiffin, Ohio.
Sterling Tool Products Co., 362 E. Ohio St., Chicago 11, Ill.
Sterling Utilities Co., Inc., 74 Sedgwick St., Brooklyn 2, N. Y.
Stevens, C. H., & Co., Inc., Stevens Bldg., Cornwall Bridge, Conn.
Stevens-Walden, Inc., 475 Shrewsbury St., Worcester 4, Mass.
Stewart Iron Works Co., Inc., The, 1537 Stewart Block, Cincinnati 1, Ohio.
Stewart Oxygen Co., 351 California St., San Francisco, Cal.
Stewart, Tark, Box 101, Worthington, Pa.
Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago 14, Ill.
Stoody Co., 11941 E. Slauson Ave., Whittier, Calif.
Stop-Fire, Inc., 125 Ashland Pl., Brooklyn 1, N. Y.
Stow Mfg. Co., 7 Shear St., Binghamton, N. Y.
Strand N. A., Div., The Belmar Corp., 5001 N. Wolcott Ave., Chicago 40, Ill.
Streichert, E. J., 1747 N. Crawford Ave., Chicago 39, Ill.
Strobel, Carl, Corp., 4700 Santa Fe, Los Angeles, Calif.
Struthers Wells Corp., 1003 Pennsylvania Ave., Warren, Pa.
Stryco Mfg. Co., 470 Natoma St., San Francisco 3, Calif.
Studebaker Machine Co., 1221 S. 9th Ave., Maywood, Ill.
Stutz-Sickles Co., 91 New Jersey Railroad Ave., Newark 5, N. J.
Sturdi-Bilt Steel Prods., Inc., 2501 Paterson Ave., Chicago 45, Ill.
Sturtevant, B. F., Co., Div. of Westinghouse Elec., Hyde Park, Boston 36, Mass.
Sulfo, Inc., 1143 E. Jersey St., Elizabeth 4, N. J.
Summit Tool & Mfg. Co., 2907 Summit St., Toledo 11, Ohio
Sun Oil Co., 1608 Walnut St., Philadelphia 3, Pa.
Sunbeam Stewart Industrial Furnace Div., Sunbeam Corp., 4433 W. Ogden Ave., Chicago 23, Ill.
Sunbury Wire Rope Mfg. Co., 880 S. 2nd St., Sunbury, Pa.
Superior Air Products Co., 132 Malvern St., Newark 5, N. J.
Superior Carbon Products, Inc., 9115 George Ave., Cleveland 5, Ohio.
Superior Flake Graphite Co., 33 S. Clark St., Chicago 3, Ill.
Superior Flux & Mfg. Co., 1302 Ontario St., Cleveland 13, Ohio.
Superior Industrial Gas Corp., 23-24 47th St., Astoria, N. Y.
Superior Pneumatic, Div. of Bingham Herbrand Corp., 4758 Warner Rd., Cleveland 25, Ohio.
Superior Oxy-Acetylene Mach. Co., 1102 High St., Hamilton, Ohio.
Superior Steel Corp., Carnegie, Pa.
Superior Tube Co., 2204 Germantown Ave., Box 191, Norristown, Pa.
Superior Tube Corp., Chicago, Ill.
Superior Valve & Fittings Co., W. Liberty Ave., Pittsburgh 26, Pa.
Superior Welding Co., 3410 E. 14th St., Los Angeles 23, Calif.
Superior Welding & Machine Co., Bartlesville, Okla.
Surface Combustion Corp., 2375 Dorr St., Toledo 7, Ohio.
Swartwout Co., 18511 Euclid Ave., Cleveland 12, Ohio.
Swartz & White Mfg. Co., Binghamton Flexible Shaft Div., 486 Chenango St., Binghamton, N. Y.
Swedish Iron & Steel Corp., 17 Battery Pl., New York, N. Y.
Swift Electric Welder Co., 8095 Livernois St., Detroit 4, Mich.
Swiss Laboratory, 1533 Hamilton Ave., Cleveland 14, Ohio.
Sylvania Electric Products, Inc., 1740 Broadway, New York 19, N. Y.
Sylvania Electric Prods., Inc., Tungsten & Chemical Div., P.O. Box 70, 718 Main St., Towanda, Pa.
Synchro Electronic Corp., 1565 Railroad Ave., Bridgeport, Conn.
Syntron Co., 815 Lexington Ave., Homer City, Pa.
Syracuse Alloy Metals Corp., 114 So. Salina St., Syracuse 2, N. Y.

T

Taco West Corp., 2620 S. Park Ave., Chicago, Ill.
Tal Bender, Inc., 417 N. Water St., Milwaukee 2, Wis.
Taylor, S. G., Chain Co., 3 141st St., Hammond, Ind.
Taylor Cylinder Div., Cuneo Press, 2262 S. Grove St., Chicago, Ill.
Taylor Forge & Pipe Works, P. O. Box 485, Chicago 90, Ill.
Taylor-Wharton Iron & Steel Co., High Bridge, N. J.
Taylor Winfield Corp., Mahoning Ave., N.W., Warren, Ohio.
Tec Welding Co., 300 Paterson Ave., Carlstadt, N. J.
Technical Operations, Inc., Arlington, Mass.
Techno Products Inc., 1908 E. 66th St., Cleveland, Ohio
Techtmann Industries, 407 E. Michigan St., Milwaukee, Wis.
Tempil Corp., 132 W. 22nd St., New York 10, N. Y.
Templeton, Kenly & Co., Gardner Road & 16th St., Broadview, Ill.
Temprite Products Corp., 1345 W. Maple, Troy Twp., Detroit, Mich.
Tenn. Coal, Iron & R. R. Co., United States Steel Corp., 1010 Brown-Marx Bldg., 20th St. & 1st Ave., N., P. O. Box 2634, Birmingham 3, Ala.
Tennessee Fabricating Co., 1490 Grimes St., Memphis, Tenn.
Tenney Engrg., Inc., 26 Ave. B, Newark 5, N. J.
Teuscher Pulley & Belting Co., 801 N. 2nd St., St. Louis, Mo.
Tex-Air Gas Co., Inc., 211 Buchanan St., Amarillo, Texas.
Thermacote Welding Products, Inc., 1005 Sante Fe Ave., Los Angeles 21, Calif.
Thermacote Welding Products, Inc., 301 Mt. Pleasant Ave., Newark 4, N. J.
Thermco Laboratories, Johnson Rd., Michigan City, Ind.
Thermex Equip. Co., 3436 Book Bldg., Detroit, Mich.
Thermo Elec. Mfg. Co., 480 W. Locust St., Dubuque, Iowa.
Thermoid Hose Co., 885 Parkside Ave., Trenton, N. J.
Thomas Machine Mfg. Co., Butler Road, Pittsburgh 23, Pa.
Thomas Truck & Caster Co., 74 Mississippi River, Keokuk, Iowa.
Thompson & Co., 1085 Allegheny Ave., Oakmont, Pa.
Thompson Engrg. Co., 220 Winchester, N. E., Grand Rapids 2, Mich.
Thompson, H. G., & Son Co., 277 Chapel St., New Haven 5, Conn.
Thompson Products, Inc., Cleveland 3, Ohio.
Thomson Electric Welder Co., 161 Pleasant St., Lynn, Mass.
Thor Power Tool Co., 175 N. State St., Aurora, Ill.
Threadwell Tap & Die Co., 16 Arch St. Greenfield, Mass.
Tillman, John & Co., 1561 W. 19th St., Long Beach 10, Calif.
Timken Roller Bearing Co., 1835 Dueber Ave. S.W., Canton 6, Ohio.
Tinkote Co., 79 Mill St., Revere 51, Mass.
Tip Top Electric Products Co., 1440 Broadway, New York 18, N. Y.
Tipaloy, Inc., 1435 E. Milwaukee Ave., Detroit 11, Mich.
Titen Metal Mfg. Co., Sieg & Craig Sts., Bellefonte, Pa.
Titanium Alloy Mfg. Div., Nat'l Lead Co., 111 Broadway, New York 6, N. Y.
Titanium Pigment Corp., 111 Broadway, New York 6, N. Y.
Tool Mfg. Co., Box 224, 19 Collier St., Hornell, N. Y.
Tocco Div., Ohio Crankshaft Co., Cleveland, Ohio.
Toledo Pipe Threading Machine Co., 1445 Summit St., Toledo 4, Ohio.
Toolcraft Mfg. Co., East Chicago, Ind.
Topeka Fdry. & Iron Wks. Co., Inc., 300 Jackson St., Topeka, Kansas.
Tork Clock Co., Mt. Vernon, N. Y.
Torit Mfg. Co., 292 Walnut St., St. Paul 2, Minn.
Torsion Balance Co., The, Clifton, N. J.
Tracerlab, Inc., 130 High St., Boston 10, Mass.
Trane Co., The, 2nd & Cameron St., La Crosse, Wisc.
Trent Tube Co., 498 S. Church St., East Troy, Wisc.
Tri-Clover Machine Co., Kenosha, Wis.
Trimont Mfg. Co., 55 Amory St., Roxbury 19, Mass.
Trindl Products, Ltd., 17 East 23rd St., Chicago 16, Ill.
Trinity Oxygen Co., 3051 Hemphill St., Ft. Worth 10, Texas.
Triplet & Barton, Inc., 831 N. Lake St., Burbank, Calif.

Trumbull Elec. Mfg. Co., 41 Woodford Ave., Plainville, Conn.
Tru-Ohm Products-Model Engineering & Mfg. Inc., Huntington, Ind.
Truscon Steel Co., Youngstown, Ohio.
Tube Turns, Div. of National Cylinder Gas Co., 224 E. Broadway, Louisville 1, Ky.
Tubular Alloy Steel Corp., Gary, Ind.
Tubular Micrometer Co., St. James, Minn.
Tubular Service Corp., 32 Broadway, New York 4, N. Y.
Turco Prods., Inc., 6135 S. Central Ave., Los Angeles 47, Calif.
Turner Brass Wks. 821 Park Ave., Sycamore, Ill.
Tweco Products Co., 1450 S. Mosley, P. O. Box 666, Wichita 11, Kansas.
Tweezer-Weld Corp., 532 Mulberry St., Newark 5, N. J.
Twentieth Century Mfg. Co., 224 W. 82nd St., Minneapolis 20, Minn.

U

Ultra-Violet Prod. Inc., South Pasadena, Calif.
Uniflex Cable Div., United Metal Craft Co., Ypsilanti, Mich.
Union Carbide & Carbon Corp., 30 East 42nd St., New York 17, N. Y.
Union Stop Fire Corp., Brooklyn, N. Y.
Union Twist Drill Co., Butterfield Div., Derby Line, Vt.
Unique Mfg. Co., 221 W. Walton St., Chicago 10, Ill.
Unique Turntable & Equip. Corp., 1125 Irving Ave., Brooklyn, N. Y.
United Blower Co., Inc., 193 Center St., New York 13, N. Y.
United Specialty Corp., P. O. Box 698, El Dorado, Ark.
United States Safety Service Co., 1215 McGee St., Kansas City 6, Mo.
U. S. Electric Welder Corp., 1258 Dorr St., Toledo 7, Ohio.
U. S. Electrical Tool Co., 1050 Findlay St., Cincinnati 14, Ohio.
U. S. Gauge Div., American Machine & Metals, Inc., Clymer Ave., Sellersville, Pa.
U. S. Quarry Tile Co., Diamonite Prods. Div., 217 Fourth St., N.E., Canton, Ohio.
U. S. Rubber Co., 1230 Avenue of the Americas, New York 20, N. Y.
U. S. Rubber Co., Wire & Cable Dept., 1230 Ave. of the Americas, New York 20, N. Y.
U. S. Safety Service Co., 1331 Oak St., Kansas City 6, Mo.
United States Rubber Co., 4300 New Haven Ave., Fort Wayne 4, Ind.
U. S. Steel Corp. of Dele., 437 Seventh Ave., Pittsburgh 30, Pa.
U. S. Steel Supply, 71 Broadway, New York, N. Y.
United States Steel Co., 525 William Penn Pl., Pittsburgh 30, Pa.
U. S. Stoneware Co., 12 East Ave., Tallmadge, Ohio
United Welded Products Inc., Sussex, Wisc.
United Welders, Inc., 17622 James Couzens, Detroit 35, Mich.
United Welding Service Co., Eclipse Rd., Box 564, Franklin, Pa.
United Wire & Supply Corp., 1497 Elmwood Ave., Providence 7, R. I.
Unitek Corp., 697 N. Lake Ave., Pasadena 6, Calif.
Universal Cutting & Welding Equip. Mfg. Co., Inc., 2850 Ravenswood Rd., Ft. Lauderdale, Fla.
Universal Engineering Co. of San Diego, 2230-32 National Ave., San Diego 2, Calif.
Universal Leather Co., 114 Pierce St., Berlin, Wisc.
Universal Pulleys Co., 330 N. Mosley, Box 1337, Wichita 1, Kan.
Universal Welder Corp., 2557 E. 79th St., Cleveland, Ohio
Universal Welding & Engrg. Co., 1310-14 Clark St., Racine, Wis.
Universal Welding Supply Co., 1235 W. 95th St., Chicago, Ill.
Universal Wheel & Abrasive Corp., 400 N. Ashland Ave., Chicago 22, Ill.
Univis Lens Co., 401 Leo St., Dayton 4, Ohio.
Uniworld Research Corp. of America, 1302 Ontario St., Cleveland 13, Ohio
Upham, Philips Webb & Co., 148 York St., New Haven 11, Conn.
Upson Walton Co., Perry Payne Bldg., Cleveland 13, Ohio.
Upton Electric Furnace Div., 16806 Hamilton H.D., Detroit, Mich.
Utica Drop Forge & Tool Corp., 2415 Whitesboro St., Utica 4, N. Y.

V

Vacu-Blast Co., Inc., P. O. Box 885, Belmont, Calif.
Vacuum Tube Products, 506 S. Cleveland, Oceanside, Calif.
Valley Electric Corp., 4221-27 Forest Pk. Blvd., St. Louis 8, Mo.
Valley Oxygen Co., 427 W. 7th St., Hanford, Cal.
Valley Oxygen Co., 311 Columbia Ave., Bay City, Mich.
Valve Mfg. Corp., 866 E. Wabash Ave., Decatur, Ill.
Van Dorn Electric Tool Co., 734 E. Joppa Rd., Towson 4, Md.
Van Dorn Iron Works Co., The, 2685 E. 79th St., Cleveland 4, Ohio.
Van Hoffman Press, 105 S. 9th St., St. Louis 2, Mo.
Van Nostrand, D., Co., Inc., 250 4th Ave., New York 3, N. Y.
Van Straaten Chemical Co., 546 W. Washington Blvd., Chicago, Ill.
Van Products Co., 5700 Old Ridge Rd., Erie, Pa.
Van Vooren Products, 2133 9th St., East Moline, Ill.
Vande Mfg. Co., 1 N. LaSalle St., Chicago 2, Ill.
Vangtronic Corp., 237 John St., Bridgeport 3, Conn.
Vanol Corp., 3186 Oak Hill Ave., St. Louis 16, Mo.
Varkell Paul, Co., 37 West 39th St., New York 18, N. Y.
Vascoloy-Ramet Corp., 800 Market St., Waukegan, Ill.
Vega Equip. Corp., 1758 Walden Ave., Buffalo 25, N. Y.
Velocity-Power Tool Co., 201 N. Braddock Ave., Pittsburgh 8, Pa.
Veltri Mfg. Co., Inc., Orchard Park, N. Y.
Vemaline Prods. Co., P. O. Box 222, Hawthorne, N. J.
Vem Lokomotivbau-Elektrotechnische Werke, Hans Beimler, Hennigsdorf near Berlin, Germany
Venus Prods. Co., 5057 S. Ashland Ave., Chicago, Ill.
Vernon Tool Co., Ltd., 1093 Meridian Ave., Alhambra, Calif.
Verson All-Steel Press Co., 9300 South Kenwood Ave., Chicago 19, Ill.
Vickers Electric Div., 1815 Locust St., St. Louis, Mo.
Victor Balata & Textile Belting Co., 53 Park Pl., New York 7, N. Y.
Victor Electric Prods., Inc., 2950 Robertson Ave., Cincinnati 9, Ohio.
Victor Electric Wire & Cable Corp., 8 Ackerman Ave., Clifton, N. J.
Victor Equip. Co., 844 Folsom St., San Francisco 7, Calif.
Victor Saw Works, Inc., 22 Cottage St., Middletown, N. Y.
Viking Div. of Mid-States Welder Mfg. Co., 6025 S. Ashland Ave., Chicago, Ill.
Vincent Steel Process Co., 2424 Bellevue Ave., Detroit 7, Mich.
Vitrified Wheel Co., Westfield, Mass.
Vlchek Tool Co., 3000 E. 87th St., Cleveland, Ohio.
Vlier Engineering, Inc., 4552 Beverly Blvd., Los Angeles 4, Calif.
Vogel Tool & Die Corp., 1825 N. 32 Ave., Melrose Park, Ill.
Voss Machinery Co., 2882 W. Liberty Ave., Pittsburgh 16, Pa.
Vulcan Corp., 18 & Cherry St., Philadelphia 3, Pa.
Vulcan Electric Co., 88-90 Holten St., Danvers, Mass.

W

Wachs Co., E. H., The, 1525 N. Dayton St., Chicago 22, Ill.
Wagner Electric Corp., 311 W. Main St., Jackson, Mo.
Wagner, A. F., Iron Wks., 1905 S. First St., Milwaukee 1, Wisc.
Wagner, H. J., Products, Inc., Box 28-WE, Jackson, Mo.
Wagner Mfg. Co., Inc., 350 W. Adams St., Jackson, Mo.
Walker Turner Co., Inc., South Ave. at Berckman St., Plainfield, N. J.
Wall Colmonoy Corp., 19345 John R St., Detroit 3, Mich.
Wallace Optical Co., Inc., 1025 Brush St., Detroit 26, Mich.
Wallace Supplies Mfg. Co., 1300 Diversey Pkwy., Chicago 14, Ill.
Walls Sales Corp., 306 East 38th St., New York 16, N. Y.
Walworth Co., 60 East 42nd St., New York 17, N. Y.
Warner Brothers Co., The, Bridgeport 2, Conn.
Warner Industries, Inc., 118-124 W. Pearl St., Cincinnati 2, Ohio.
Warren Alloy, 915 Oakland Ave., Pontiac, Mich.
Washington Steel Corp., Washington, Pa.
Wassco Electric Prods. Corp., 126 W. Cass St., Joliet, Ill.
Watchemoket Optical Co., Inc., 232 W. Exchange St., Providence 3, R. I.
Watson Stillman Co., 109 Aldene Rd., Roselle, N. J.
Waukee Engineering Co., Inc., 407 E. Michigan St., Milwaukee 3, Wis.
Waverly Petroleum Products Co., Drexel Bldg., Philadelphia 6, Pa.
Wayne Chemical Products Co., 9800 Copeland Ave., Detroit 17, Mich.
W. C. DeLille Co., 426 N. High St., Columbus 15 Ohio.
Wearalay Co., 4170 E. Washington Blvd., Los Angeles, Calif.
Weatherhead Co., 300 E. 131st St., Cleveland 8, Ohio.
Webb Corp., The, 402 E. Broadway, Webb City, Mo.
Wedge Protectors, Inc., 3985 Jennings St., Cleveland 9, Ohio
Weinberg & McKee, 600 W. Jackson Blvd., Chicago 6, Ill.
Weldaloy Products Co., 2323 E. Nine Mile Rd., Hazel Park, Mich.
Weldclo Mfg. Co., 253 Market St., Philadelphia 6, Pa.
Welded Truck & Specialty Co., Inc., 1302 Diversey Parkway, Chicago 14, Ill.
Welder & Machine Corp., 103 20th St., Brooklyn 32, N. Y.
Welders Products, 141 W. Jackson Blvd., Chicago, Ill.
Welder's Products & Mfg. Co., 1420 So. 13th, Omaha 9, Nebr.
Welders Supply & Mfg. Co., 108 W. Central Parkway, Cincinnati 10, Ohio.
Welders Supply Co., 608 Thomas St., Little Rock, Ark.
Welderz Frend Generator Co., 718-28th St., Lubbock, Texas.
Weldex, Inc., 2200 W. Fort St., Detroit 16, Mich.
Welding Alloys Mfg. Co., 744 Broad St., Newark 2, N. J.
Welding Apparatus Co., 2750 W. Van Buren St., Chicago 12, Ill.
Welding Engineering Co., 333 N. Michigan Ave., Chicago 1, Ill.
Welding Equip. & Service Co., 2123 Texas St., El Paso, Texas.
Welding Equip. & Supply Co., 223 Leib St., Detroit 7, Mich.
Welding Fittings Corp., P.O. Box 860, New Castle, Pa.
Welding Gas Products Co., 821 E. 11th St., Chattanooga, Tenn.
Welding & Industrial Prods. Ltd., P. O. Box 3521, 1370 Makaloa St., Honolulu 11, T. H.
Welding Machines Mfg. Co., 17325 Lamont Ave., Detroit 12, Mich.
Welding Sales & Engr. Co., 8750 Grinnel Ave., **Detroit 13, Mich.**
Welding Service & Supplies Co., 1830 S. Cicero Ave., Cicero 50, Ill.
Welding Service Sales, Inc., 926 Howard St., San Francisco 1, Calif.
Weldit, Inc., 990 Oakman Blvd., Detroit 6, Mich.
Weldoloy Products Co., 25753 Grosok Rsvl., E. Detroit, Mich.
Weldon Roberts Rubber Co., 351-365 Sixth Ave., Newark 7, N.J.
Weldrite Co., Inc., 29-23 40th Rd., Long Island City 1, N. Y.
Weldrod Co., Meadowbrook (Philadelphia Area) Penn.
Weldwire Co., Inc., N. W. Corner Emerald & Hagert Sts., Philadelphia 25, Pa.
Weller Electric Corp., 808 Packer St., Easton, Pa.
Wells Mfg. Corp., 3100 Welding Ave., Three Rivers, Mich.
Wells, Martin, Inc., 5886 Compton Ave., Los Angeles 1, Calif.
Welsh Mfg. Co., 9 Magnolia St., Providence 9, R. I.
Weltronic Co., 19500 W. 8 Mile Rd., Detroit 19, Mich.
Wen-Lyn Products, 903 S. Main St., Burbank, Calif.
Wesley Lacquer Co., 95 Fourth St., Brooklyn 33, N. Y.
West Bend Equipment Corp., West Bends, Wis.
West Point Mfg. Co., 26935 W. Seven Mile Rd., Detroit 19, Mich.
West Texas Oxygen Co., 2607 Avenue H, Lubbock, Texas.
Western Chain Co., 1807 Belmont Ave., Chicago 13, Ill.
Western Insulated Wire Co., 2421 E. 30th St., **Los Angeles 58, Calif.**
Western Oxygen, Inc., 2205 Wayne Ave., Lubbock, Texas.
Western Oxygen Inc., 2949—16 Ave. S. W., Seattle 4, Wn.
Western Tool & Mfg. Co., The, 1620 E. Pleasant St., Springfield, Ohio.
Western Wire Prods. Co., 1314 So. 18th St., St. Louis 4, Mo.
Westinghouse Electric Corp., 511 Wood St., P.O. Box 868, Pittsburgh 30, Pa.
Westinghouse Electric Corp., Electronic Tube Div., Box 284, Elmira, N. Y.
Westinghouse Elec. Corp., Sturtevant Div., Hyde Park, Mass.
Weston Electrical Instrument Corp., 614 Frelinghuysen Ave., Newark 5, N. J.
Wet-Blast Mfg. Co., Inc., 3230 E. Woodbridge, Detroit 28, Mich.
Wetzler Clamp Co., 43-15 11th St., Long Island City 1, N. Y.
Wharton & Wilcocks of Amer., Inc., 17 Battery Place, New York 4, N. Y.
Wheeler, Knight & Gainey, Inc., 74 E. Long St., Columbus, Ohio.
Wheeler Protective Apparel, Inc., 224 West Huron St., Chicago 10, Ill.
Wheeling Steel Corp., Wheeling Steel Corp. Bldg., Wheeling, W. Va.
White Co., L. B., 112 S. 2nd Ave., Onalaska, Wis.
White Metal Rolling & Stamping Corp., 80 Moultrie St., Brooklyn 22, N. Y.
Whitehead Metal Products Co., Inc., 281 Albany St., Cambridge 39, Mass.
S.S. White Plastics Div., 10 E. 40th St., New York 16, N. Y.
Whiting Corp., 157th & Lathrop Ave., Harvey, Ill.
Whitman & Barnes, 2108 W. Fort St., Detroit 16, Mich.
Whitmore Oxygen Co., 430 E. South Temple St., Salt Lake City 2, Utah.
Whitney, W. A. Mfg. Co., 636 Race St., Rockford, Ill.
Whittaker, Clark & Daniels, Inc., 260 W. Broadway, New York 13, N. Y.
Wickman Glove Co., 1827 San Pablo Ave., Berkeley 2, Calif.
Wickwire Spencer Steel Div., The Colorado Fuel & Iron Corp., 575 Madison Ave., New York 22, N. Y.

Properties of Metals

Metal or Alloy	Wt/cu ft	Specific Gravity	Melting Point F	Yield Strength	Tensile Strength	Elongation	Brinell Hardness	Modulus of Elasticity 10^6 psi	Thermal Conductivity Btu/sq ft hr/°F/in.	Electrical Conductivity %Copper	Electrical Resistivity Ohms/cmf	Coefficient of Expansion °F x 10^{-6}
Aluminum, 99%	165	2.72	1220	5,000	13,000	35	23	10.2	1570	59.0	17.6	13.8
Antimony	417	6.67	1166				30	11.2		4.0		6.7
Arsenic	367	5.72	1497							4.5		2.14
Bismuth	612	9.8	520				9	4.6		1.3	670	7.47
Brass, Yellow	535	8.6	1660	18,000	40,000	60	60	14.0		26.0	40	
Bronze, Aluminum	481	7.7	1905	30,000	76,000	55	125	15	173	15.0	80	16.5
Bronze, Manganese	522	8.38	1598	25,000	60,000	30	100	15	700	25.0	42	11.7
Bronze, Tobin	535	8.6	1625	24,000	54,000	40	100	15	810	25.0	42	11.9
Cadmium	540	8.64	1610		9,200	20	20	7.1		34.0		16.6
Chromium	419	6.7	2740				350			55.0		4.5
Cobalt	550	8.8	2700		35,000		125			16.0		12.4
Copper	557	8.93	1981	10,000	32,000	40	30	15.8	2680	100.0	10.4	9.8
Everdur	534	8.57	1866	20,000	55,000	50	95	15.0				9.6
Gold	1204	19.3	1945		17,000	45	25	13	2000	71.0	14.6	7.8
Inconel	534	8.57	2540	35,000	85,000	45	150	30	420	7.8	100	7.2
Iron, Cast	450	7.22	2300		25,000	0.5	180	13	310	2.9	400	6.0
Iron, Malleable	462	7.42	2300	37,500	57,000	22	110	12.5				6.6
Iron, Pure	490	7.86	2795	19,000	38,000	45	67	30.1	470	17.5	57	6.8
Iron, Wrought	480	7.76	2750	27,000	40,000	14*	97 to 105	29.0	418	15.0	87	6.7
Lead, Chemical	710	11.4	620	1,900	2,500	50	5	2	240	8.0	124	16.4
Lead, Tellurium	707	11.34	620	2,200	3,000	45	6	2	240	8.0	124	16.4
Magnesium, 99%	108	1.74	1240	13,000	25,000	4	40	6.5	1090	37.0	27	14.3
Manganese	475	7.3	2246		130,000	60	200			35.0	29	12.8
Molybdenum	651	10.3	4532	100,000	140,000		147	50.2		35.0	29	3.1
Monel	551	8.84	2400	35,000	75,000	40	125	26	180	3.6	290	7.8
Nichrome	517	8.19	2460	50,000	70,000	5	170		135	1.5	675	13.7
Nickel, 99%	556	8.91	2650	8,500	46,000	28	85	30	575	18.8	57	7.4
Nickel Silver 18	546	8.75	2030	20,000	58,000	40	90	18.5	230	8.3	17.5	10
Platinum	1330	21.4	3218	10,000	24,000	24	25	24	480	15.0	64	4.9
Silicon	147	2.34	2588					16.5		1.6	650	3.5
Silver	655	10.5	1762	8,000	23,000	50	30	10.5	2900	106.0	9.6	10.6
Steel, 0.15C	490	7.85	2700	40,000	60,000	35	130	30.0	460	14.5	72.0	6.7
Steel, 0.30C	490	7.85	2600	52,000	84,000	24	170	30.0	460	14.5	72.0	6.7
Steel, 0.50C	490	7.83	2500	72,000	98,000	26	201	30.0	460	14.5	72.0	6.7
Steel, Manganese	495	7.93	2450	75,000	118,000	22	300	29.0				6.7
Steel, Nickel (2330)	490	7.85	2600	84,000	105,000	25	217	30.0				6.7
Steel, Cast	490	7.85	2600	40,000	72,000	26	140	30.0	400	16	60	6.7
Steel, Stainless (304)	495	7.93	2550	35,000	85,000	55	160	29.0		2.0	460	9.3
Tin (Cast)	458	7.28	450	1,710	3,130	70	5.9	7.1	455	13.5	69	11.7
Titanium	281	4.5	3270				230	12.1				4.0
Tungsten	1191	19.1	6152		500,000			51		31.0	33.1	2.2
Vanadium	380	6.0	3182									5.6
Zinc	447	7.14	786		20,000	60	35	18.5		30.0	34	18.0

* Elongation in 8 in.

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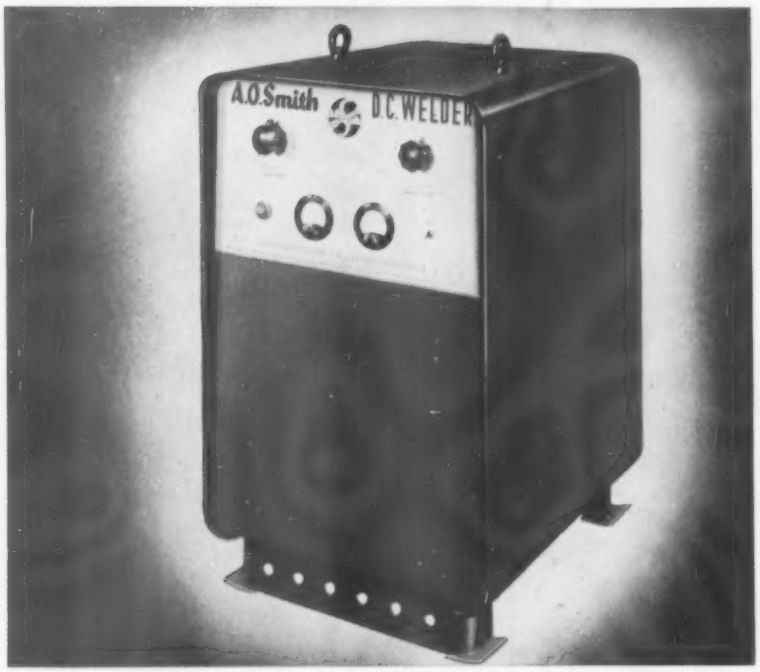

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